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ABSTRACT

The handbook is intended for public officials, planners, developers, and others interested in determining probable costs to the public of a development proposal. Specifically, it is intended to help local officials identify cumulative and indirect impacts triggered by a development project beyond the actual development site. The handbook is organized in 16 sections. The first 15 sections (land use, population, private sector economic impacts, public sector fiscal impacts, housing, transportation, schools, utilities, public services and facilities, police and fire services, public health, social impact assessment, energy, aesthetics, and historic/archeological factors) deal with factors to consider when reviewing a development proposal. The last section summarizes physical impact considerations and includes a bibliography and an environmental checklist. Each section is subdivided into five parts: rationale for considering the factor, key questions for evaluation, methodology for answering questions, criteria and standards, and references and bibliography. (SB)

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THE PRICE OF CHANGE:
A GROWTH IMPACT ASSESSMENT GUIDE

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In keeping with the spirit and intent of PRI the Guide reflects contributions made by a number of people. For support and assistance in planning, our appreciation is extended to the Ferry County Board of Commissioners, the Ferry County Planning Commission and the Ferry County Planning Department.

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INTRODUCTION

A major challenge facing rural communities and counties today is that of successfully anticipating and dealing with change. The changes occurring in these rural areas are primarily manifested in physical growth and development. As new residential, commercial and industrial development are introduced subsequent changes in the social, cultural and economic conditions of the community occur.

In the past, local governments have often been forced to react to development proposals without a full realization of the resultant costs to the community. Development plans illustrated the changes expected on the specific building site, but little consideration was given to the indirect or cumulative costs of growth.

Faced with a steadily increasing number of development proposals, local governments are now cognizant of real public costs exacted upon city and county in terms of budgets and quality of life considerations. As the public demand for new roads, schools, utility systems, and general services increases alongside of rising operation and maintenance costs, local governments have sought a more equitable and effective allocation of costs between the public and private sectors.

The Guide is designed to respond to this need. It is intended that it be used by public officials, as managers of public resources, to determine the price of change. As such, it is directed at the rural area struggling to apply practical business sense to community and county growth and development.

DESCRIPTION AND PURPOSE OF THE GUIDE

Guide Format

The Guide is divided into sixteen sections. The first fifteen sections deal with factors to be considered when reviewing a development proposal. The last section summarizes several physical impact considerations and includes a physical impact bibliography. It is assumed that this growth impact assessment will supplement the environmental review procedures under the National and State Environmental Policy Acts (NEPA and SEPA). In this regard, the sections and key questions closely follow those found in the standard environmental checklist.

Each section is tabbed for easy use and reference. Each section is subdivided into:

1. Rationale for consideration of this factor
2. Key Questions for the evaluative process
3. Methodology for finding the answers to key questions
4. Criteria and Standards to be followed (if applicable)
5. References and Bibliography

Purpose of the Guide

This guide is designed for use by public officials, planners, developers and others who are interested in determining the probable costs to the public of a development proposal. It is specifically intended to assist local officials in identifying the cumulative and indirect impacts triggered by a development project beyond the actual development site. In this way, areas of high cost may be identified and lower cost alternatives explored with the opportunity for negotiating a more equitable sharing of cost allocations between the public and private sectors.

To illustrate, assume a developer comes to the local Planning Department with a preliminary proposal for a 100 unit subdivision. During the early discussion stages, the developer/applicant would complete a SEPA environmental checklist. The planner would review the project and the checklist with the use of the handbook. High cost areas would be identified and alternatives negotiated. At the time the proposal comes before the Planning Commission or County Commissioners, these officials would use the handbook to formulate appropriate questions, check information, and weigh the general costs and benefits against the public interest.

By reviewing the guide's Housing Section, the Commissioners could determine the approximate number of new residents the project may bring into the area. Turning to the section on Schools, they could determine how many students will be placed in local schools. From this, the Commissioners can determine if the proposed project will necessitate new school facilities or faculty. By turning to the section on Fiscal Impact Factors, the local officials could determine what new property taxes the project would bring to the school district and determine if additional taxes generated would cover the costs of new services required. This process may be used for all of the fifteen factors presented in the handbook.

Use of the Guide

The factors should be reviewed in the order in which they are listed. As one moves down the list of factors, the analysis of each will build on the analysis of previous factors. That is, the determination of impacts to schools will take into account and build on the analysis of land use, population, housing, etc.

Within each section, the reviewer should follow the order of the sub-sections: reviewing the rationale, asking the key questions, answering key

questions with the methodology provided in the Guide and checking against criteria and standards.

If the project is large and complex and additional help is needed, the references provided for each section will guide the reviewer to an appropriate source of assistance. In some instances, this may simply be another document or it may be technical assistance from a local, state or federal agency.

Every attempt has been made to keep this document short, easy to understand and easy to use. It is designed to be available in planning offices and on the desks of commissioners at public hearings. As new or additional information becomes available, it may be added to the appropriate sections.

The success of the Growth Impact Assessment Guide will depend upon how well it is used, not how often. With this in mind, the Partnership for Rural Improvement can and will provide a short training session on use of the Guide by public officials. Additional information may be obtained by contacting:

Partnership for Rural Improvement
330 Cleveland Hall
Washington State University
Pullman, WA 99164
(509) 335-5509

Partnership for Rural Improvement
Community Service Center
203 Isle Hall
Eastern Washington University
Cheney, WA 99004
(509) 359-7902

Partnership for Rural Improvement
Building 2400
Big Bend Community College
Moses Lake, WA 98837
(509) 762-5351 ext. 202

Partnership for Rural Improvement
Continuing Education Center
Washington State Community
College District 17
W. 3410 Fort George Wright Drive
Spokane, WA 99204
(509) 456-4067

Partnership for Rural Improvement
Batjer Hall
Wenatchee Valley College
Wenatchee, WA 98801
(509) 662-1651

LAND USE

by

Dr. Joseph Luther¹Rationale

Generally, growth and change in a community or county becomes visible through land development in the forms of homes, businesses, industries and other physical structures. These uses of the land, in turn, will cause other changes in the physical, social, cultural and economic character of the building site, the surrounding neighborhood and even the entire community.

It is important to understand the character of the existing land use in the development area. This pattern of land use often represents a life-style of the residents and forms the basis of local property values. A change in the land use, whether an increase in density or a shift from residential to commercial, will have impacts through most of the factors discussed in this Guide. For this reason, it is important to begin your analysis of a proposed project by reviewing both the existing land use and the proposed land use changes.

The reviewer should not only consider the changes in how the land is used, but should also pay careful attention to the activities that will occur on the land. For example, a change from agricultural to industrial land use will mean new buildings, roads and jobs. The new industrial activities will also mean changes in traffic volumes, water consumption, sewage, electrical demand and requirements for fire and police services.

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Eastern Washington University.

In some cases, one type or intensity of land use is incompatible with another because of the effects of the activities conducted on a site. For this reason, manufacturing plants are not located next door to private homes. When such a situation does occur, the desirability and the value of the home declines. As value drops, the property tax revenue also declines. But demands for services may actually increase. Land use affects both private and public fiscal conditions.

Traditionally, communities have avoided this problem by separating the land use in districts. In each district, the activities, appearances, intensity of use and values should be compatible. Where two different land use districts meet at a common boundary, a buffer, such as a road, open space, or intermediate land use should be used to ease the transition.

Key Questions

An evaluation of development projects relative to land use should be commenced by asking the following questions:

1. What is the existing land use in the project area?
2. What is the proposed land use and activities?
3. Will the proposed project result in a change in the existing land use?
4. Is the change compatible with, or buffered from, surrounding land uses?
5. Is the proposed land use in conformance with local plans, policies and regulations?
6. Will the proposed project serve the public interest?

Methodology

The process of methodically answering the key "land use" questions is straightforward in its directness. The methodology involves determining current land use in the area of concern. Existing land use may be disclosed by examining available land use maps which may be found in the local Planning Office.

Determine existing land use by checking the land use map in the local Planning Office. If none is available, you may wish to prepare such a map by conducting a land use survey. The easiest way is a "windshield" survey. Obtain a parcel map of the area from the County Assessor's Office. Place this map on a clipboard or other hard surface. Ask someone to drive you through the area. As you pass the various lots, note on the map the present land use.

A simple way to do this is to write down a symbol on each lot shown on the map. The following is a short set of land use categories you may wish to use. When you get back to your office, you may wish to color another map, based upon these notes, to serve as an official Land Use Map.

LAND USE CODING

<u>Land Use</u>	<u>Symbol</u>	<u>Color</u>
Single Family Residential	SF	Yellow
Multi-Family Residential	MF	Dark Brown
Mobile Home Residential	MH	Light Brown
General Commercial	GC	Orange
Shopping Center Commercial	SC	Red
Light Industry	LI	Light Gray
Heavy Industry	HI	Dark Gray
Public	P	Blue
Agricultural	A	Green
Vacant Land	V	No Color

Compare the existing land use map to the proposed land use plan. Identify areas where conflicting land use activities may share common boundaries. In these conflict areas, identify buffers which could ease the transition from one type of land use to another, or which could screen one from the other. Typical buffers include the following:

1. An expanse of open space

2. Landscaped or dense natural vegetation
3. Change in elevation in land
4. Fences or walls
5. Street or other rights-of-way

Also compare the proposed land use to the comprehensive plan, policies and regulations for the area. Is the proposed land use the same as that required in the plans, policies and regulations? Identify areas of non-conformance. If the proposed land use cannot conform to the public requirements, you must determine if the development will be in the public interest or if it will be in the public interest to change the plans, policy or regulation. Does the proposed development serve the public interest by helping the community meet an anticipated demand for land use? Such a demand is generally based on future population growth. Some guidelines on population and land use are presented in the next section.

Criteria and Standards

Information is available from a variety of sources in regard to current standards which may require conformity. All projects should therefore be checked against the prevailing legislated code requirements, if any, and comparison checks should be made using professionally accredited criteria and standards not necessarily mandated by law.

Included herein are criteria and standards as provided by professional sources specifically directed at land use considerations. They are general indicators and one should always look for minimal requirements as set forth in the Revised Code of Washington and available local county and municipal codes.

TYPICAL AREA REQUIRED FOR GROWTH²

<u>Land Use</u>	<u>Area Per 1,000 Population</u>
Residential	55 Acres
Commercial	7
Industrial	3
Schools	3
Health	0.5
Roads, Recreation, Parks and Open Space	149
Miscellaneous	1

GENERAL INDICATORS FOR COMMERCIAL FACILITIES³

<u>Type of Center</u>	<u>Neighborhood</u>	<u>Community</u>	<u>Regional</u>
Leading Tenant (Basis for definition)*	Supermarket or Drugstore	Variety, Discount or junior department store	One or more full- line department stores of at least 100,000 square feet GLA
Typical Gross Leasable Area (GLA)*	40,000 sq. ft.	150,000 sq. ft.	400,000 sq. ft.
General Ranges in GLA*	30,000-100,000 sq. ft.	100,000-300,000 sq. ft.	300,000 to over 1,000,000 sq. ft.
Usual Minimum Site Area*	4 acres	10 acres	30-50 acres or more
Minimum Support**	2,500 to 40,000 people	40,000-150,000 people	150,000 or more people
Median Tenant Sales (per square foot of GLA)***	\$78.91	\$76.06	\$76.82
Trade Area**	5-10 minute drive	15 minute drive	25-30 minute drive

*The Urban Land Institute, THE COMMUNITY BUILDER'S HANDBOOK. Washington, D. C.: ULI, 1968 (revised edition in preparation.)

**The Urban Land Institute, DOLLARS AND CENTS OF SHOPPING CENTERS. Washington, D.C.: ULI, 1975.

*** Generally accepted "rules of thumb" used in economic market analysis.

²This information is excerpted from: Golden, et al (1979) ENVIRONMENTAL IMPACT DATE BOOK. Ann Arbor, Ann Arbor Science Publishers.

³Source excerpted from COMMERCIAL FACILITIES: A CITYWIDE FACTS AND INVENTORY REPORT, PHASE I COMMUNITY IMPROVEMENT PROGRAM. Report to the Minneapolis Planning Commission and City Council. Pub. No. 143, Community Improvement Program Series No. 4, Spring 1963.

Pedestrian interruptions	Interruption of the flow of pedestrian shoppers contribute to the decline of an area as a desirable place to shop. Examples of obstruction to pedestrian flow include: - Commercial blocks containing mixtures of retail and service uses. - Dead spots, such as vacant lots and alleys which will cause the shopper to lose interest. - Traffic, either vehicular or pedestrian, which does not generate shoppers.
Sidewalks-Poor Condition	Broken and uneven sidewalks littered with trash discourage pedestrian shopping.
Alleys-Poor Condition	Poorly maintained alleys and rear yards are a blighting influence on all types of commercial areas as well as adjacent residential property.
Inadequate Parking	Lack of parking facilities will contribute to the obsolescence of commercial structures before actual physical deterioration is evident.
Traffic	An excess of through-traffic adds nothing to the retail shopping center; it tends to divide the area into segments and interferes with automobile and pedestrian traffic.
Inadequate Off-Street Loading	When separate loading facilities are not provided, standing trucks block streets and sidewalks and reduce the flow of traffic.
Short Blocks	Retail stores built on short blocks created by frequent street intersections suffer from disrupted flow of shoppers and excessive traffic congestion.
Obsolescence of Structures	Obsolescence due to lack of adequate floor space, inadequate site and other design features will contribute to the decline of a shopping area.
Condition of Structures	One blighted structure in an area will contribute to the decline of confidence in a shopping area, thus contributing to additional blight.
Vacant Upper Floors in Structures	A healthy vigorous center will usually have the second floor occupied. Vacant second floors will generally indicate an advanced degree of obsolescence.
Uncontrolled Signs	Uncontrolled exterior signs usually downgrade the general appearance of the entire area and in the general confusion created, will defeat their original intent. Signs will give an indication of the general condition of the area. Other signs which may indicate a deteriorating shopping center are: - Frequent shift of occupants. - A noticeable number of vacancies. - Shift to non-retail or service areas. - Lack of maintenance.

⁴Excerpted from COMMERCIAL FACILITIES: A CITYWIDE FACTS AND INVENTORY REPORT, PHASE 1 COMMUNITY IMPROVEMENT PROGRAM, Report to the Minneapolis Planning Commission and City Council. Pub. No. 143, Community Improvement Program Series No. 4, Spring 1963.

Land Use References and Bibliography

Questions involving land use which may arise during the evaluative process can be directed to a range of sources which are available for purposes of local assistance. The following list is not intended to suggest an ordering of sources, but only possible sources of information and assistance.

The following Land Use Bibliography is provided as an up-to-date selection of materials which may be of additional help.

References

City, County, or Regional Planning Office

Local colleges and/or universities

Planning and Community Affairs Agency
Olympia, Washington 98504
1-800-563-5677

Soil Conservation Service
U.S. Department of Agriculture

United States Geological Survey

Washington State Conservation Commission
Olympia, Washington 98504
206-753-3895

Washington State
Department of Ecology
Community Affairs Consultant

Washington State Department of Game
Environmental Affairs
600 Capitol Way
Olympia, Washington 98504
206-753-3319

Washington State Department of Natural Resources
Bureau of Surveys & Maps
Olympia, Washington 98504
206-753-5337

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POPULATION¹

by

Lorna Michael Butler²Rationale

A knowledge of population trends is a must for predicting the possible effects of development. Population changes and economic changes cannot be separated. They interact directly to affect virtually everything underlying community well being, i.e: adequate housing, stable businesses, secure jobs, functionable streets, quality schools, dependable hospitals, adequate protection, responsible government planning and decision-making systems.

Population change is one of the most visible signs of growth. The distribution, size, and composition of the population shift, and the speed with which the movement occurs, have a prime effect on all secondary impacts--social, cultural, political, fiscal, and environmental. This in turn places added demands on policy makers. For example, the opening of a mine may attract workers from surrounding areas. Not only might this increase school enrollment, but it could accelerate the need for housing, public facilities and services. Local government may be faced with development of air and safety policies associated with a relatively unfamiliar industry. On the other hand, decision makers may want to consider more imaginative policies limiting the type of growth that occurs. Business people may benefit from added consumer income; simultaneously, consumers may demand more service, expanded inventories, and improved management capacity. Anticipation of, and management of these

¹This section is excerpted from a paper prepared by L. M. Butler, entitled: "Assessing Population Change in Rapidly Growing Communities." The full text of the paper is available from: Washington State University Cooperative Extension Service, June 1979.

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secondary impacts depends to a great extent on public officials' and citizens' abilities to assess and interpret, in advance, current and future population structure and demographic processes. A reasonably accurate assessment will go a long way in assuring fair and equitable decisions sensitive to the needs of all affected people.

This type of information may suggest systematic ways of providing, in advance, for needed social services and facilities. It can serve as a benchmark against which to measure community changes. If increased financial support is needed, population data can present a convincing argument in support of improved transportation systems, training programs, health care services, and police and fire protection. By involving more people and organizations in collecting, organizing and analyzing the data, public officials can build citizen understanding of the community situation, thereby assuring more knowledgeable and responsible public support for future improvements.

Key Questions

A growing population places pressures on local government's planning and decision-making resources to provide additional facilities and services. Knowledge of population trends will help community leaders anticipate public needs and demands as well as other probable effects of change. Although this information will not solve the problems associated with rapid community growth, it can help to clarify the facts about the people who live in the community and those who may be moving in from outside. This information can be gathered by asking the following questions:

1. Has the local population been growing or declining over the past 5-10 years?
2. How does the rate of growth compare to that of the state, and other neighboring states?

3. What is the long term population size projection for the local setting?
4. What is the expected size profile of the source of impact? How will it vary in the pre-construction, construction, and operational phases? What is the expected duration of the phases?
5. How will the size of the source of impact, over time, affect the present and future size of the local community?
6. Considering the characteristics and numbers of people expected with the source of impact, what are the most likely residential locations for this population? What effects will this new population distribution have on the existing settlement patterns?
7. Are there particular age groups that will be especially vulnerable to the effects of change throughout the growth impact period? Consider age groupings in both the local setting and the source of impact.
8. What would you expect the ratio of males and females to be in the source of impact population? Will the proportion remain continuously stable or will there be periods when the numbers of men or women will be extremely high or low?
9. What might be the long term effects of the projected sex and age balance of the total population, e.g., the future numbers of children, the future numbers of widows? How reliable do you think these future projections are?
10. Will the present minority populations be affected in any way by the composition of the impacting populations? If so, how.
11. Does the new development hold any potential for improving people's income status, or making it worse? Who stands to gain? Who stands to lose?
12. How will the present community's educational level groupings be affected by the expected educational level groupings of incoming residents?
13. What are the future projections for local school enrollment given the age composition of the incoming population? How will the new population affect future educational facility and resource needs?
14. How will particular groups of people be affected by the changing employment setting, e.g., teenagers, women, local employers, ethnic groups, the elderly and families in general? Who is more likely to benefit? Who stands to lose?

Methodology

While it is possible for a community to collect its own population data, much of the needed information is available from local sources. Demographic

material is easily accessible, therefore the investigator should not be overwhelmed with its sheer volume. In the early stages, try to limit the analysis by narrowing the numbers and types of key questions. Know precisely what the demographic data is to be used for--to demonstrate a need, to estimate a target population or clientele, or to evaluate the impact of a change in service.

A profile of the in-coming migrant population should be developed in consultation with major employers, developers, comparable communities, and by relative studies. Characteristics of the in-coming migrant population and related impacts can be anticipated and a profile constructed by gathering data with respect to the following categories:

- . Who the various in-coming population groups are, e.g., construction workers, planners, designers, operators, support and service workers, managers
- . Estimation of numbers of employees that will be drawn from local setting and the number who will come from outside
- . Anticipated arrival and departure dates for each in-coming population group
- . Ratio of in-coming men to women
- . Median age of in-coming groups
- . Marital status of in-coming groups
- . Household composition (number of people, presence of spouse and children) of in-coming groups
- . Probable residence sites (depending on commuting patterns, availability of schools, housing, services, of in-coming groups
- . Estimated number of available residences at each of above sites
- . Number of children anticipated per in-coming household
 - Preschool level
 - Elementary level
 - High School level
- . Probable schools for children of each in-coming group
- . Probable recreation facilities for each in-coming group, e.g., swimming pool, park, theater, bowling alley

- Probable health care facilities for each in-coming group, e.g., hospital, community service center, family counselling services

Criteria and Standards

The following section lists eight of the most frequently used criteria for analyzing population composition. Each criterion is accompanied by a list of possible variables that could be studied depending on the needs of the community. The investigator should be selective and use only those that relate directly to the type of policy or decision being made.

1. Age:

Median or average age

Percentage of population in certain age groups, e.g., preschoolers, teenagers, employed labor force, retirement, women in childbearing years

Percentage of population by sex, in certain age groups, e.g., teenagers, employed labor force, childbearing years

Dependency ratio -- proportion of "nonproductive" age group (under age 20 and over age 65) compared to "productive age group (age 20-64)

2. Sex:

Percentage of males and females

Sex ratio -- ratio of males to females

3. Ethnic Background:

Absolute number and percentages of each ethnic group, e.g., Blacks, Hispanics, Indians, Asians

4. Marital Status:

Absolute numbers and percentages of presently married males and females over age 14

Absolute numbers and percentages of never married males and females over age 14

Absolute numbers and percentages of presently separated/divorced males and females

Absolute number of widowed males or females

Median age by sex of presently married, never married, separated/divorced, widowed

Absolute numbers and percentages, by sex, of each ethnic group presently married, never married, separated/divorced, widowed

5. Living Arrangements

Average number of persons per household (note for ethnic groups)

Average number and percentage of persons living in one-person households, primary³ households, husband-wife households without children, husband-wife households with children under 18 (note for ethnic groups)

Absolute number and percentages of single female families with no spouse present and dependent children (note for ethnic groups)

Percentage of total households identified as single person-elderly (note by sex and ethnic group)

6. Income:

Average household income (note different living arrangements and ethnic groups)

Absolute number and percentages of households with income below poverty level⁴ (note different living arrangements and ethnic groups)

Average income of poverty level household (note different living arrangements and ethnic groups)

Percentage of households on public assistance (note different living arrangements and ethnic groups)

Average or mean size of households with poverty or public assistance income (note ethnic groups)

7. Education

Absolute number and percentage of children enrolled in elementary school

Absolute number and percentage of children enrolled in high school

Absolute number of preschool-age children

³ A "primary" household is one where two or more unrelated individuals reside.

⁴ Current poverty level figures for non farm and farm families are available from the U. S. Department of Labor.

Percentage of persons age 18 and over with less than high school, high school graduation, four or more years of college (note by sex and ethnic group)

Median years of school completed for population age 25 and over (note by sex and ethnic group)

8. Employment:

Absolute number of persons age 16 and over in labor force (note by sex and ethnic group)

Percentage of unemployed persons age 16 and over (note by sex and ethnic group)

Absolute number of labor force women with children under age 6, and age 6-18

Percentage of persons age 65 and over in labor force

Absolute number and percentages of labor force women who are heads of own household with no spouse present

Absolute number of unemployed labor force women who are heads of a dependent household

Population References and Bibliography

Questions involving population changes which may arise during the evaluation process can be directed to a range of sources available for purposes of local assistance. The following list is not intended to suggest an ordering of sources, but only possible sources of information and assistance.

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Washington State Department of Employment Security
Research and Statistics Branch
212 Maple Park
Olympia, Washington 98504
(206) 753-5142/5222
Publications: Labor Area Summary, monthly
Employment and Payrolls, quarterly

Washington State Department of Social and Health Services
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State Center of Health Statistics
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Washington State Office of Financial Management
Population, Enrollment and Economic Studies Division
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Publications: Economic Forecast
Higher Education Enrollment Forecasts
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Population Forecast
Population Trends

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PRIVATE SECTOR ECONOMIC IMPACTS

by

Ronald C. Faas¹Rationale

New projects, such as mining or industrial expansion, affect a local community's economy through private sector impacts. These projects usually involve new investment in plant facilities and lead to increased employment, income and sales. In addition, such new economic activity often stimulates associated business, as commercial activities and residential housing are expanded to serve the new employees.

Such economic impacts interest various groups of people and may benefit some more than others. New job opportunities are welcomed by workers, but may cause concern among existing employers because of higher wage levels. Business owners and managers are keenly interested in the prospects of increased sales directly to the new or expanded plant operation and to the new employees. Increased housing demand means more business and income for local realtors, building contractors, and property owners, but it also means a higher rent for people in the community - including those on fixed incomes. Local government officials look towards increased property and sales tax revenues generated by increased business sales and additional assessed valuation due to new investment. Thus, different people have different interests in the various kinds of private sector economic impacts of community growth.

Careful assessment of these private sector economic impacts of new activity such as mining or industrial expansion is very important to many people. Accurate information about changes in employment, income, and sales

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is needed to anticipate related changes in population, housing, physical facilities, school enrollment, demand for other public services, and related social stress on individuals and organizations. Private sector economic impact data on employment, income, sales and new investment, therefore, provide a necessary base for estimating related impacts so that private entrepreneurs, public officials, and other concerned citizens can make more informed decisions as they respond individually and collectively to rapid community growth.

Key Questions

The following kinds of questions should be considered when evaluating the private sector impacts of a new development. If the proposed new development is being justified on the basis of economic benefits, such as new jobs, payrolls, sales and investment, these are questions to which local officials can reasonably expect answers. The questions will serve to enhance the public policy decision making process by enabling more rational public decisions.

1. How many people will be directly employed by the new activity during the construction phase, and during the plant operations phase?
 - a. What kinds of workers will be employed during the construction phase? How many of each? For how long?
 - b. What kinds of workers will be employed during the operations phase? How many of each? Beginning when?
 - c. How many of these new jobs are likely to be filled by workers hired from within the local community? Will these be people currently unemployed, or be employees hired away from other jobs? Will such vacancies be filled with new employees, or by consolidating job functions?
 - How many of the new workers hired by the project are likely to commute in from other communities?
 - How many of the new employees are likely to migrate into the community and become new residents?

(In addition, how many others might migrate into the community in the hopes of obtaining jobs in the new export activity, and possibly add to the community's unemployment rolls if not hired?)

2. How many service (or nonbasic) jobs are projected to be generated in the local community as a result of the new activity?
 - a. Again, how many of these new service jobs are likely to be filled by workers hired from within the local community? Will these be people currently unemployed, or be employees bid away from other existing jobs?
 - b. How many of these new service workers are likely to commute in from neighboring communities?
 - c. How many of these new service workers are likely to migrate into the local community and become new residents.
3. What is the anticipated annual payroll of the new activity during its construction phase, and during the plant operation phase?
 - a. How will this new payroll be distributed by type of worker?
 - b. How much of this new payroll will likely go to workers hired from within the local community, and to new workers migrating into the community? (What is the income loss from previous jobs in the community not refilled?)
 - How much of this new payroll will go to commuters living outside the local community (who tend to spend their income where they live)?
 - c. How much of this new payroll going to existing and new residents in the local community will likely be spent locally, rather than outside the community in neighboring trade centers?
4. How much new service income (payroll) will be generated by the new export payrolls being spent in service business in the local community?
 - a. How much additional service payroll will be generated through purchases by the new export activity of inputs from local businesses?
5. What is the annual volume of sales expected by the new activity?
6. What annual volume of sales by local support businesses to the new export activity is predicted?
 - a. What annual volume of new sales by local retail and service businesses to new workers employed by the new export activity and by service businesses is expected?

7. How much new capital investment in plant and facilities is planned by the new activity?
8. How much new investment in expanded commercial facilities can be expected by support and service businesses, and how much new housing investment is likely by new employees or existing residents with increased incomes?

Methodology

It is difficult to predict the nature and extent of social impacts of a proposed project without an accurate estimate of the amount of new population likely to migrate to the community due to the new employment, the level of new income generated, and some reasonable estimate of the community's financial ability to provide the additional public services and facilities likely to be demanded by the new population. Thus, without careful attention to private sector changes in employment, income, sales, and new investment, attempts to estimate related impacts of a new project such as changes in population, housing, public facilities and services, fiscal and social impacts, will be done on a rather shaky base.

How can the private sector economic impacts of a new development project be estimated? One tool that is often used is the concept of an economic multiplier. Multipliers are based on the idea of interdependency between two types of business sectors in the local economy, the basic and nonbasic sectors. Basic activities are those which produce goods and services for sale outside the local economy (exports). By selling exports, these activities bring "new" dollars back into the local economy to be spent, providing fuel for growth. Some basic or export activities in eastern Washington are agriculture, mining, manufacturing, tourism, and construction of large-scale projects such as a dam or electric generating plant. By selling in response to a demand originating outside the local economy, these export sectors are considered "prime movers" of the local economy.

Other business activities which sell goods and services to residents or other businesses within the local economy make up the nonbasic or nonexport sectors. These generally include such service-oriented businesses as retail grocery and clothing stores, auto and machinery repair shops, banks, accountants and doctors. By selling their goods and services in response to a demand originating within the local economy, the service or nonbasic activities "circulate" within the local economy, the "new" dollars brought in by the export sectors.

An expansion in sales to final demand generally has a multiplicative effect such that total change in the local economy's income is greater than the dollar volume of the initial expansion alone. An additional increment of output by an industry producing goods for export outside the local economy, for example, will require additional inputs. Firms and individuals supplying the additional inputs to the exporting industry will, in turn, increase purchases for their suppliers. This process continues through successive rounds of expenditures. Likewise, this cumulative effect can be illustrated by tracing \$100 in wages spent by a new worker at the plant. Assume the worker spends \$50 in the local community and spend \$30 outside the local economy, with the remaining \$20 being used for saving and income taxes, etc. The local merchants receive \$50 and use \$25 to purchase goods from suppliers outside the community. The remaining \$25 is spent locally for wages, utilities and purchases from other local businesses. In this example, the initial \$50 spent locally by the worker generates another \$25 of local income the first time it is respent. This process repeats itself over and over again. Multipliers are an easy way to estimate the sum of all the spending and respending without adding up each individual transaction.

As introduced in an economics principles textbook, the multiplier is the numerical relationship between an original increase in expenditure and the ultimate change in total income that results as the money is spent and respent through various sectors of the economy. There are several kinds of multipliers used to assess private sector economic impacts of new export activity, included are: employment multipliers, income multipliers, and output multipliers.

Note the following example as an assessment of such impacts extracted from an Environmental Impact Statement. A public official should consider the Environmental Impact Statement submitted as to the information it contains about issues which must be addressed.

The following example is extracted from one EIS.

"As a new basic industry in the area, Company X, as a source of employment, would sell much of its product to markets outside of its location. Therefore, its operations employees would represent an increase in basic employment within the region. New nonbasic employment associated with the proposed development would be persons employed by firms or industries within the area that supply Company X with production-process goods and services, plus additional employees in wholesale/retail trade, services, and local government sectors."

"Company X's assessment of 450 basic jobs creating 900 nonbasic jobs, with a total employment growth of 1,350, may be high because the current level of nonbasic employment in County A is part of an existing trade/service/governmental system serving a multi-county area with a population of 30,000 to 35,000 or more. A substantial proportion of any new jobs will be filled by residents of this area, whose trade, service, and governmental 'needs' are already fulfilled by the area's existing system."

"The Department of Ecology has developed an alternative assessment of total employment impacts, based on the 1972 Washington State Input-Output model. This analysis suggests that an increase of 450 basic jobs would generate 225 nonbasic jobs, for a total employment impact of approximately 675 within the region."

By way of explanation an employment multiplier is the total change in Full-Time Equivalent (F.T.E.) employment generated in the local economy for each change of one F.T.E. employment in an export sector of the local economy.

(Note that one F.T.E. can be a full-time job or it can be two or three part-time positions with total hours worked equaling one man year.) In the E.I.S. example, Company X used an employment multiplier of 3.0 to estimate that 450 new export jobs would generate a total of 1,350 new jobs in the local economy. In contrast, the Department of Ecology used a more conservative multiplier of 1.5 to estimate that the same 450 new export jobs would generate a total of only 675 new jobs in the same local economy. Both totals include the initial 450 new export jobs.

A household income (or earnings) multiplier is the total change in household income throughout the local economy from a \$1.00 change in household income payments by an export sector. For example, if the household income multiplier for mining firms in the local economy was 2.5, each initial \$1.00 increase in the mining firms' payments to household would generate another \$1.50 increase in other household income for a total of \$2.50 increased payments to household throughout the local economy.

An output (or business) multiplier is the amount of business activity generated by a \$1.00 change in export sales of the products or services of a particular sector.

Techniques for estimating economic multipliers range from guessing or using rules of thumb to sophisticated econometric models. Two of the most commonly used tools, however, are the export base approach and the input-output model. In an input-output model, the local economy is divided into separate business sectors, and an accounting is prepared of what each of the sectors buy and sell from every other sector. From this, it is possible to derive multipliers that estimate the changes in the economy caused by an increase or decrease in sales of any one sector of the local economy. However, an I-O model is costly to assemble, since it may require an extensive survey to compile the data necessary for its computation. Furthermore, the predicted

input-output relationship may not hold true over time. Thus, a forecast made on the basis of an input-output model may be no better than a forecast based on the two-sector export base model. Export base multipliers have the advantages of being the quickest and easiest to use, compute, least expensive, and have minimal data requirements. Since the export base approach generates an aggregated multiplier, its accuracy for specific economic sectors is far less than that of the input-output model, but it is tolerable for most situations in smaller, more rural economies.

Standards and Criteria for Evaluating Multipliers

It was noted in the previous section that two different employment multipliers were estimated by Company X and the DOE, ranging from 3.0 to 1.5. That difference meant a range of total employment impacts from 1,350 to 675 new jobs to be generated from 450 new export jobs. What factors might explain the difference in the multipliers that were calculated? And how might one judge which multiplier was more accurate?

Essentially, the test of accuracy for a multiplier is how closely does that multiplier reflect the actual economic relationships in the local economy under consideration. Due to the cost of conducting an export base study or developing a local input-output model, analysts often "borrow" multipliers that were not developed specifically from data for the local economy under study. Such multipliers are "overlaid" onto the area on the assumption that the multiplier will adequately reflect the relationships in the local economy. An example would be to use a multiplier from the mining sector in Big Horn County, Wyoming to estimate impacts of new mining activity in Ferry County, Washington. Or a multiplier from the mining sector in the state I-O model may be "stepped down" to the local economy. The overlaying practice, when used appropriately, can save money and time, and produce acceptable results. However, there are many instances in which an area is so different that overlaying will not work.

In evaluating an "overlay" multiplier, it is important to determine whether economic interdependencies in the two areas are sufficiently similar so that a dollar will circulate to the same degree in approximately the same sectors before it leaks from the local economy.

"Leakage" is a drain from the local economy to elsewhere. Leakage is a concept useful in examining the comparability of the economy for which a multiplier was estimated and the local economy to which it may be applied. Some factors affecting leakage, and the size of a multiplier, include the size and structure of the local economy, and spending patterns in the local economy due to its geographic location and accessibility to major trade centers.

The size of the economy being considered can influence multiplier size. A larger area generally has a greater variety of businesses; thus, more of a given dollar is apt to be spent locally before "leaking" than would be the case in a smaller area. A multiplier for a county will be smaller than that for a multi-county area, which in turn will be smaller than the multiplier for a state-wide economy. Even for a state, a rough rule of thumb would be that the income multiplier within a state would be less than twice the original new income. Any multiplier that exceeds two should be subjected to critical review before acceptance of use in further analysis.

Two economies with similar size and population may have quite different multipliers, depending on the structure of each local economy. Consider two areas with similar new manufacturing plants, where one can buy raw materials locally and the other must import those materials. If a community is able to provide the goods and services required by both the workers and the plant, the multiplier will be much greater than it would be if some or all those goods and services must be purchased from outside the local economy. Furthermore, different segments of the local economy have different backward linkages to

other segments of the local economy. If the new plant purchases labor only, then the impact is different than if another new development needs to purchase utilities, transportation, etc., along with labor.

A multiplier for a particular sector, such as mining, might also vary from one community to another due to differences in excess capacity in the local economic structure. To illustrate excess capacity, if the local labor market provided enough unemployed, or underemployed, workers to fully meet the needs of the new mining operation, then few new workers would need to be drawn in from outside the local economy. In contrast, if very little of the needed work force were available from the local economy, then a sizeable percentage of the new workers would be drawn into the community, perhaps as commuters rather than new residents. A relatively higher income multiplier should result from new payrolls to local workers being spent locally than from those same payrolls going to commuters spending most of their income outside the local economy.

Similarly, local retail business establishments operating with excess capacity could absorb considerable new business before needing to add more salespersons or expand their facilities. On the other hand, if such businesses were already operating at full capacity, increased sales would likely create new jobs and payrolls in operating the additional business activity and in construction of expanded facilities to handle the increased sales, thus, contributing to higher employment and income multipliers.

A multiplier is also affected by the local economy's geographic location and accessibility to major trade centers. The total income generated by a new export activity could be reduced drastically if a large proportion of the new payroll to local residents is being spent outside the local economy. Money spent by local residents for purchases in stores outside the local community is "leaked" out because it is not likely to get circulated back within the local economy. Thus, areas near trade centers (with the trade center located outside

the local economy) have smaller multipliers due to leakages than do similar size areas containing their own major trade areas containing their own major trade centers. The latter keeps more of each dollar in the local economy for more rounds of spending.

Another issue is whether an "average" multiplier or a "marginal" multiplier has been determined. The average income multiplier is typically presented as the ratio of total income to export income in a given time period. The marginal income multiplier, on the other hand, is the change in total income divided by the change in export income. There may be substantial differences in the value of these two multiplier estimates due to changes in the structure of the local economy over time due to shifts in the relative importance of particular export sectors.

The discussion in this section has examined some factors that influence the size of a multiplier for a local economy. Accuracy of a multiplier depends on how well it reflects the actual economic relationships in the particular local economy. Since, those actual relationships are difficult and costly to determine, due to differences in local economies, it is difficult to judge which multiplier might be more accurate. Rather than choosing between the two multipliers of 3.0 and 1.5 presented in the E. I. S. extract, an appropriate course might be to display the employment impacts of using both multipliers, as shown in the example. This recognizes the difficulty in obtaining an exact estimate of the multiplier, yet allows the community to anticipate the impacts of the high and low estimates of changes in economic activity.

A precaution is that the size of the multiplier should not be the sole criterion used in evaluating a new economic activity. For example, a hot dog stand may have a high multiplier and a pulp plant a much lower one. One should also consider the amount of initial employment, income, etc., brought in by the new activity, which along with the multiplier effect,

influences the total economic impact within the local economy. One hundred new workers in a sector with a multiplier of 1.1 would have ten times the impact of two new workers in another sector with a multiplier of 5.5.

Another precaution in using multipliers is to recognize that an aggregate multiplier may not apply equally to all service sectors in the local economy. Some types of service businesses may experience higher income impacts from each \$100 of new construction payroll than other business sectors do. Similarly, within a given sector, such as retail business, consideration should be given to whether that increased local business will go to existing business establishments or to a new shopping center that might be opened up by outside investors.

In summary, employment, income and output multipliers are tools for estimating private sector economic impacts of a new development within a local economy. These tools provide no final answers, and in fact may generate more questions than answers. However, local public officials may be confronted with the use of economic multipliers when asked to react to project proposals, or to Environmental Impact Statements and other studies containing economic impact analyses prepared by consultants. By considering the material presented herein, the reader will be better prepared to evaluate what economic impacts were actually analyzed, and to question the assumptions on which the analyst based the study's projections.

Private Sector Economic Impacts References and Bibliography

Questions involving private sector impacts which may arise during the evaluation process may be directed to a range of sources available for purposes of local assistance. The following list is not intended to suggest an ordering of sources, but only possible sources of information and assistance.

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PUBLIC SECTOR FISCAL IMPACTS

by

Ronald C. Fass¹Rationale

Any proposed development project will fiscally impact local government. The impacts will be felt as consequences of the redistribution of public service costs and changes in the tax revenue base.

The need for local governmental units to consider public sector fiscal impacts is essential to the management of public revenues and the costs of public service delivery. Development is often stated in terms of new tax revenues to the local governmental unit while new service demands related to the project are ignored. The consequences may be seen in cases where the outcome is assessed with the realization of service demands and associated costs which are in excess of current revenue reflecting the additional new property assessment.

As an illustration a growing community may encounter immediate costs in the area of school classroom expansion. This new public expenditure is not immediately offset with new tax receipts due to a lag in new property being placed on the tax rolls. Furthermore, increased tax revenues from a new business activity, such as mining, may accrue to a particular school district identified with sitting, while another district actually bears the burden of increased student enrollments and general public service costs. Finally, within any given region, costs of services required by new residents, will be distributed throughout the resident taxpayer population with undue burden being placed upon those least able to manage the new or increased costs.

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The importance of assessing public sector fiscal impacts is well substantiated. Local governmental officials and citizens need to consider the full range of costs as well as benefits of any proposed development.

Key Questions

Public officials and community leaders should assess the financial impacts of development projects upon government revenues and expenditures by asking the following questions:

1. Which revenue categories will be affected by the development? How?
2. How will expenditures be affected by the development?
3. Using the average costing technique what are the cost estimates?
4. Using the marginal costing technique what are the cost estimates?
5. What new capital expenditures will be called for?
6. When will the project begin generating public revenues relative to the generation of public expenditures?
7. Absent of development, what are the estimates of public expenditures and public costs as reflected in budget projection.

The questions can be asked during all phases of the assessment process. It is recommended that the questions be used in the design of a fiscal impact study to insure that the information received from a detailed analysis best serves the needs of the local decision-makers.

It is further recommended the fiscal studies be designed to clearly state objectives, methods, and assumptions. By using this acronym, OMA, public officials and community leaders can improve the quality of studies used to guide the decision-making process.

Methodology

To assess the fiscal impact of a new development, analysis must show the relationships between the development and local government expenditures

and between the development and local government revenues. Since particular revenue and expenditure categories are not equally sensitive to changes in population, it may not be necessary nor appropriate to estimate changes in every revenue source and every type of public expenditure. One approach is to differentiate those functions which serve people from those more closely related to property. Changes in street, water and sewer expenditures, for example, are more sensitive to the number, location and density of new housing units than to the number of people occupying them. Similarly, property taxes are based on that property's assessed valuation rather than on population. Costs of functions which serve people include police and fire protection, general governmental services, and schools, while people-related revenues are largely identified as sales taxes, service charges, and state and federal aid. Some of these people-related expenditures are more sensitive to changes in population than are others. School district operating costs, for example, are more closely related to population numbers than general government services. Just because a small county spent \$59.30 per capita for general government services last year is not a good indication of what it would have spent that year if county population has been 10 percent higher or lower. A county could very easily spend more or less per person relative to an increase in population. What a county spends on general government services is dependent not only on population, but also on what happens to other revenue sources, state and federal mandates and decisions, characteristics of the new residents, and a number of other complex factors. While additional population is likely to create pressures for additional expenditures in the future (both from the people themselves and from the department heads with greater perceived responsibilities), some of these people-related expenditures will not be immediately reflected in the budgets. This suggests that an analysis distinguish between long-run pressures on expenditures and estimate short-run expenditure increases.

Within any selected expenditure category, there are two basic approaches to cost allocation: average costing and marginal costing. In the average costing approach, costs are assigned to a new development according to an average per capita cost per unit of service (local government or school services) times the number of units of service the development is estimated to require. For example, total operating expenses for new students may be obtained under this method by multiplying the estimated number of new students by the most recent annual operating expenditure per average daily attendance figure.

This method, however, does not consider excess or deficient capacity that might exist for particular services, or the possibility that a new development might fall at the threshold level, calling for major new capital construction to accommodate the increased growth. Where unused facilities are available for an increased population or enrollment, the marginal cost of serving an additional person or student will be less than the average per capita cost. Conversely, when new facilities must be built, the marginal cost will be higher than the per capita service cost. Since marginal costing relies heavily on careful analysis of existing demand/supply relationships for local governmental and school services, average costing is the more commonly used approach. However, in cases where it is anticipated that growth will require the construction of additional capital facilities, the average costing approach will understate the fiscal impacts of that growth.

This deficiency can be easily overcome by using the average costing approach to estimate operating costs of services due to new population or students, and adding to that an annual cost of facilities expansion. These may include estimated new capital expenditures such as sewer line extension, disposal plant expansion, water main or source and treatment plant expansion, street or road construction, or additional school classrooms.

Similarly, it may be misleading to estimate local government or school district revenues by simply multiplying per capita or per student revenues times the new population or enrollment related to the new development. In the first place, there is no point in attempting to estimate whether additional revenues will exceed or be less than additional costs due to the new development if the analysis is locked into a starting assumption that revenues equal costs, as they do in any previous budget year, on a total or per capita basis. The per capita or per student property tax revenue from last year's budget may be based on assessed valuation of industrial, commercial, and residential property. The marginal revenue per new student associated with a new residential subdivision may be less than the average revenue per new student associated with an industrial expansion may be higher than the average revenue per student. An approach that takes these factors into account would combine the marginal revenue and average revenue methods, by calculating the marginal revenue anticipated from new property taxes based on increased assessed valuation of new industrial, commercial, and residential property associated with the new development. The average revenue approach seems more appropriate for calculating state and federal aid usually based on enrollment or population.

Criteria and Standards

Fiscal impacts are estimated by projecting the direct, current public costs and revenues associated with residential or nonresidential growth to the local jurisdiction(s) in which this growth is taking place.

For Washington cities and counties, several categories of revenues and costs are identified by the Budgeting, Accounting, and Reporting System (BARS) procedures and classifications required by the state auditor.

BARS revenue categories relevant to fiscal analysis include:

- (a) Taxes (general property taxes, sales taxes, business and occupation taxes)
- (b) Licenses and Permits, Charges for Services, and Fines and Forfeits
- (c) Intergovernmental Revenue (Federal shared revenues and state shared revenues)

The BARS expenditure categories include:

- (a) General Governmental Services (includes legislative, finance, personnel, etc.)
- (b) Security of Persons and Property (police, fire protection, etc.)
- (c) Physical Environment (water, sewer, parks and recreation, etc.)
- (d) Transportation (streets and roads)
- (e) Other Services (including economic and intellectual environments)

There is no one method of fiscal impact analysis appropriate to all problems. The method used will depend upon the objectives of the analysis, the local situation and the quality of information available.

Fiscal impact analysis can be guided by different objectives. A fiscal study may be used to estimate the impact of a large project, such as an industrial plant or residential subdivision, on expenditure and revenues of affected local jurisdictions. Fiscal analysis may also be useful in evaluating expenditure and revenue effects of adopting a new comprehensive plan, or changing annexation policy. Finally, such analysis may also be used in estimating the fiscal impacts of a change in state or federal policy.

Even for a given objective, a number of cost and revenue estimates are possible. For instance estimating school costs and revenues usually involves estimating the number of school children per new dwelling unit. Clearly, no one knows what this exact number will be, or even the best way to estimate it. Yet, the estimated costs and revenues depend on this number. When the value of such a critical number cannot be closely estimated, it is often useful to take different values of the number (within a reasonable range) and see how

they affect the estimated costs and revenues. This is called sensitivity analysis. Sensitivity analysis can highlight the variables which are most critical and important to the study's conclusions.

Providing a range of estimates through sensitivity analysis is important also because fiscal impact analysis is often used as part of an advocacy process. As an example, if only one estimate is reported, the analyst may have chosen that estimate of the number of school children, which leads to results most strongly supporting the position of the study's sponsors. If a sensitivity analysis is displayed, however, any user of the results can choose from the range of estimates that estimate which seems most reasonable, and draw appropriate conclusions, for example, about school costs, revenues, and taxes related to the number of new school children expected with the new development.

Another important use of sensitivity analysis is to provide a comparison of estimated public service costs and tax revenues with the development and projected costs and revenues without development. If the community is experiencing changing economic and social conditions, without the development, it would be misleading to estimate project fiscal impacts of a development on the basis of a "before-after" comparison of costs and revenues related to the development with current costs and revenues. Making a "with-without" development comparison requires data on population and school enrollment trends and excess capacity in public services. To illustrate, consider two school districts each having a capacity of 1,100 students, and current enrollment of 1,000. Enrollment trends show District A gaining 100 students per year and District B losing 50 students per year due to existing age structures. Now consider the impact of either district gaining 150 new students next year from an industrial plant expansion. A "with-without" analysis would show

District A already at the 1,100 capacity without development and 150 students above capacity with development. A similar "with-without" comparison would show District B having 950 students without development and at the 1,100 capacity with development. An incorrect "before-after" comparison, in contrast, would have indicated both school districts exceeding capacity with 1,150 students after development. Both estimates would have been misleading, understating the additional space needed for District A by 100 students, and showing District B needing space for 50 more students, when, the correct "with-without" estimate showed no additional space would be required.

Table 1. Estimating Additional Operating and Maintenance Costs and Capital Costs Associated with Incoming Population for Services Commonly Provided by Communities.

Public Service	Operating and Maintenance				Capital	
	Current Costs (a)	Costs per Capita (b)	Size of Incoming Population (c)	Change in Costs (b x c)	Capacity Needed	Anticipated Expenditure
						Year Amount
School district						
General government (510)*						
Police, fire/security (520)						
Utilities (water/sewer) (534)						
Parks/recreation/cemetery (530)**						
Streets, roads/transp. (540)						
Economic environment (550)						
Medical health (560)						
Library/intellectual (570)						

* Numbers in parentheses refer to the BARS account number from the Washington Budgeting, Accounting, Reporting System for local government.

** 530 account total minus 534 subtotal.

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Public Sector Fiscal Impacts References and Bibliography

Questions involving public sector fiscal impacts which may arise during the evaluation process may be directed to a variety of sources available for purposes of local assistance. Most of the data necessary can be obtained from local sources. The following list is not intended to suggest an ordering of sources, but only possible sources of information and assistance.

The following Bibliography is provided as a brief up-to-date selection of materials which may be of additional help.

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City Clerk
Proposed budgets
Yearly Expenditure Reports

County Assessor
County budget

Local School Districts
Data on sources of revenue and expenditures
Average daily attendance

Planning and Community Affairs Agency
Fiscal Impact Assessments
400 Capitol Center Building
Olympia, WA 98504
1-800-5677

Washington State Department of Agriculture
Fiscal Division
406 General Administration Building
Olympia, WA 98504
206-753-5063

Washington State Department of Commerce and Economic Development
Research Division
101 General Administration Building
Olympia, WA 98504
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HOUSING

by

Abby Byrne¹Rationale

New projects, such as mining or industrial development, will have an impact on the residential community in so far as new jobs are generated. With the introduction of new jobs and the likelihood of an in-migration of employees and their families, the residential community will have to withstand the demands for housing.

Housing is the basic and most fundamental unit of a community. A home incorporating social amenities is a primary indicator of quality of life considerations and community well being. Housing is therefore directly related to community viability and will reflect immediately developmental changes elsewhere in the region.

Development is accompanied, in most cases, by residential development. New residential communities are the largest users of land with their subsequent need for roads, schools, and other public services. Simultaneous to the realization of public cost associated with new home developments, is the realization that the homes will eventually provide new tax revenues, stimulate the creation of additional business growth and more new jobs.

To assess the impacts of development on local housing, one needs to have an understanding of the existing housing situation, particularly in reference to supply. Anyone assessing the situation needs information in regard to housing availability, quality, and cost. This knowledge coupled with the studies of land usage and population impacts is necessary to assess the market demand for housing generated by development.

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Key Questions

The following questions should be considered when evaluating the housing sector impacts resulting from development:

1. What is the current housing situation?
 . in terms of available/vacant units, either for purchase or for rent.
2. Will development spell an increased/new demand for housing?
3. Does the development proposal contain a proposal for new housing?
4. If a need for housing is generated by development what housing amenities will be required? (number of bedrooms, etc.)
5. Does current available housing meet the projected demands in reference to amenities?
6. What are current residential property values?
7. What are current rental rates?
8. How will property values and rental property rates be affected?

Methodology

The existing housing situation should be explored in three ways:

1. Total number of existing housing units.
2. Total number of occupied units.
3. Total number of vacant and/or available units.

It is helpful to know how many of these existing units are inadequate or substandard and should be replaced. This is another important factor in housing demand reflected in the requirements for specific housing amenities.

Housing demand may be determined by following these steps:

1. Determine total future population.
2. Subtract total existing population.
3. This gives you the anticipated population growth.
4. Divide this new population by three (3) to determine the future number of families and thus homes.

5. This gives you the anticipated number of new homes or dwelling units which will be required by new residents.
6. Add to this the number of existing dwelling units which are substandard and should be replaced.
7. This gives you the total future housing demand.
8. Subtract from this the number of existing dwelling units which are vacant and/or available.
9. This last number is the actual demand for housing or dwelling units in your community.

If there is a need for additional housing, it should be determined, if the development proposal will meet some or all of the demand. At the same time, you should determine if the proposal will eliminate any existing housing - creating additional demands for housing. If the project will bring new employees to the community, these new families will also cause an increase in housing demand. Both of these factors must be added to the previous analysis of housing demand.

The preceding analysis will give you information regarding available and adequate housing. One additional aspect should be considered: affordable housing. While the number of dwelling units necessitated by the project may be met by current available housing, they may not be affordable by those needing the new units.

One indicator of the price of affordable housing is the personal or family income of the existing and anticipated residents of the community. Generally, financial institutions use a factor of 2.5 times the gross income as a mortgage guideline. Personal income projections will provide an understanding of future residential buying power and rental rates. This can also be directly related to employee wages in new commercial or industrial facilities.

This information regarding the residential buying power of existing and potential residents should be compared to any proposed housing prices.

Criteria and Standards

Information is available from a variety of sources in regard to current criteria and standards which may require conformity. All projects should be checked against prevailing legislated code requirements, if any, and comparison checks should be made using professionally accredited criteria and standards not necessarily mandated by law.

Included herein are criteria and standards as provided by professional sources. They are general indicators and one should always look for minimal requirements as set forth in the Revised Code of Washington, and available local county and municipal codes.

TYPICAL POPULATION BY DWELLING UNIT

<u>Unit Type</u>	<u>Average Family Size</u>
Single Family	2.8
Garden Apartment	2.3
High-Rise Apartment	2.1
Mobile Home	3.0

HOUSING TYPE BY DENSITY

<u>Density DU/Acre</u>	<u>Gross Lot Area Per Dwelling Unit</u>	<u>No. of People Per Acre</u>	<u>Suggested Housing Type</u>
1	40,000	3	Single Family
2	20,000	6	Single Family
3	14,000	9	Single Family
4	10,000	12	Single Family
5	8,000	15	Single Family
6	6,600	18	Single Family
7	5,800	21	Single Family
8	5,000	24	Single Family
10	4,000	30	Duplex

HOUSING TYPE BY DENSITY (cont.)

<u>Density DU/Acre</u>	<u>Gross Lot Area Per Dwelling Unit</u>	<u>No. of People Per Acre</u>	<u>Suggested Housing Type</u>
12	3,300	36	Duplex
16	2,500	48	Apartments
20	2,000	60	Apartments
25	1,600	75	Apartments
30	1,330	90	Apartments
40	1,000	120	Apartments

Housing Sector Impacts References and Bibliography

Questions involving housing impacts which may arise during the evaluation process may be directed to a variety of sources available for purposes of local assistance. The following list is not intended to suggest an ordering of sources, but rather possible sources of information and assistance.

The Bibliography is provided as a brief up-to-date selection of materials which may be of additional help.

References

City, County, or Regional Planning Offices

Local colleges and/or universities

Planning and Community Affairs Agency
Olympia, Washington 98504
1-800-563-5677

Federal Housing Administration

Department of Housing and Urban Development

Farmers Home Administration

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TRANSPORTATION

by

Samson Fadare¹Rationale

Transportation planning in response to anticipated growth is concerned with the design and construction of transportation systems which will maximize movement and access while giving due regard to safety, amenity and cost.

Land use and housing are dependant upon transportation systems to provide movement of population and goods in your community. In most cases, land use development will cause a demand for transportation systems. In some instances, new transportation systems will trigger new land uses. The provision of safe and efficient movement of people and goods is the responsibility of government, federal, state and local, as is the cost of providing this service.

Development requires traffic accessibility and circulation and will have an impact upon existing transportation systems. Often, this effect is felt beyond the project site and area. These efforts will represent both capital and operation and maintenance costs to the local government. For this reason, the design of transportation systems must consider location, access, capacity, safety and cost, particularly in relation to existing systems and land use. This is particularly true with land development that is traditionally a generator of high traffic levels, such as commercial and other employment centers.

It is necessary to analyze the existing transportation system and to compare the capacity of these systems to the projected demand of the proposed project. Movement of goods and people, facilities, capacity, condition of

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roadways, and level of service are all factors which you may wish to investigate. It is also important to determine parking demand and compare this with your present supply of parking spaces in your community. Provision for the future growth of traffic and the maintenance of adequate and efficient systems as well as environmental quality will require a continuing program of capital projects which must be carefully planned with any new developments in your community.

Key Questions

An evaluation of development proposals relative to transportation impacts should be commenced by asking the following questions:

1. What will be the specific transportation needs of the proposed project?
2. Will the project generate additional traffic? How much?
3. Where will this traffic be distributed or routed?
4. Will the project increase traffic hazards to motor vehicles or pedestrians?
5. Are the existing transportation facilities and systems well integrated and adequate to serve the project as proposed?
6. Will truck traffic be routed through residential areas, or past schools and hospitals or through shopping areas?
7. Will the new traffic require traffic control devices?
8. How much additional maintenance will this new traffic require of the existing roadways?
9. Will new roads or parking areas be required?
10. Will additional air, rail or other freight services be required?

Methodology

In order to identify present conditions and problems and to make an assessment of future conditions, the assistance of the municipal county and state transportation personnel should be sought. With the assistance of

available resource personnel a map of the area should be developed. On this map the following features should be identified:

- | | |
|------------------------|---|
| 1. Arterial roads | 5. Public transportation routes and terminals |
| 2. Collector roads | 6. Rail, air and water facilities |
| 3. Minor service roads | 7. Truck routes and facilities |
| 4. Other roadways | 8. Bicycle or walking paths |

The map, constructed accurately, will answer most of the key questions. It will help in the further evaluation of the project by virtue of the information to be garnered from its examination. For example the local law enforcement officials should be asked to identify areas where traffic safety problems would be manifest or potential.

Criteria and Standards

Information is available from a variety of sources in regard to current transportation standards which may require conformity. All projects should therefore be checked against prevailing legislated code requirements, if any, and comparison checks should be made using professionally accredited criteria and standards not necessarily mandated by law.

Included herein are criteria and standards as provided by professional sources. They are general indicators and one should always look for requirements as set forth in the Revised Code of Washington and available local county and municipal codes.

<u>Roadway Type</u>	ROAD DESIGN CAPACITY ¹	
	<u>Lane Capacity in Cars Per Hour</u>	<u>Average Daily Traffic (ADT)</u>
Two lane Street	500-700	6,500 to 8,500
Four lane street	450-750	12,000 to 20,000
Four lane expressway	700-900	20,000 to 30,000

¹California, State of (1978) ECONOMIC PRACTICE MANUAL: A HANDBOOK OF PREPARING AN ECONOMIC IMPACT ASSESSMENT. Sacramento, Office of Planning and Research.

GENERAL GUIDE TO TRIP END GENERATION²
VEHICULAR TRAFFIC BY LAND USE

<u>Type of Land Use</u>	<u>TYPE OF DEVELOPMENT</u>	<u>AVERAGE DAILY TRIPS</u>
Residential	Subdivision	9.5 per unit
	Apartment	5.9 per unit
	Mobile Home Park	5.4 per unit
	Retirement Community	3.3 per unit
Commercial	Shopping Center (Regional)	485 per net acre
Industrial	Various Types of Industry	88 per net acre
	Industrial Park	77 per net acre
	Warehouse	81 per net acre
	Mass Production	137 per net acre
	Administration	71 per net acre
	Research and Development	65 per net acre
	Speciality Production	39 per net acre
Major Institution	College (4 yrs)	2.2 per student
	College (2 yrs)	1.3 per student
	High School	1.3 per student
	Grammar School	0.7 per student
	Civic Center	30 per 1,000 sq. ft. floor area
	Hospital	10.4 per bed
	Medical Office	41 per doctor
	Library	51 per employee
	Picnicing	0.8 per total acre
	Gold Course (18)	6.4 per acre
Recreational	Bowling Lane	33 per lane
	Marina	4.8 per berth
	Swimming	7.4 per total acre
	Hiking Trails	0.5 per total acre
	Overnight Camping	0.3 per total acre
Airport	County Airport with less than 415 based aircraft	8.6 per based aircraft
	Municipal Airport with more than 500 based aircraft	12 per based aircraft

²Ibid

SUGGESTED OFF-STREET PARKING REQUIREMENTS³

<u>Land Use</u>	<u>Parking Requirements</u>
Single family residential	1 per dwelling unit
Duplex residential	1.5 per dwelling unit
Multi-family residential	1.5 per dwelling unit
Motels & Tourist Homes	1 per rentable unit
Hotels, Dormitories, Lodges	1 per dwelling unit/guest room
Private Clubs	1 per each 100 sq. ft. in assembly hall
Auditoriums, theatres, stadiums	1 per each four seats
Schools, Junior and Elementary	3 per each teaching station
Funeral Homes	1 per each six seats in largest chapel
Churches	1 per each six seats in largest sanctuary
Dance Halls, Skating Rinks	1 per each 1,000 sq. ft. of gross floor area
Bowling Alley	4 per lane or alley
Hospitals	1 per each 1,000 sq. ft. of gross floor area
Nursing Homes, Sanitariums	1 per each 1,000 sq. ft. of gross floor area
Office, Banks and Similar	1 per each 400 sq. ft. of gross floor area on ground floor plus 1 per each 600 sq. ft. in basement & upper floors
Public Garages for Repair	1 per each 400 sq. ft. of gross floor area
Retail and Service Establishments	1 per each 250 sq. ft. of gross floor area plus 1 per each 400 sq. ft. in basement & upper floors
Drive-Ins	1 per each 100 sq. ft. of gross floor area

³Ibid

<u>Land Use</u>	<u>Parking Requirements</u>
Wholesale and Retail Machinery/Furniture	1 per each 1,000 sq. ft. of gross floor area
Warehouses	1 per each 3,000 sq. ft. of gross floor area
Manufacturers/Industry	1 per each 1,000 sq. ft. of gross floor area

Note: Each parking space shall be not less than 8 ft. in width and 19 ft. in length.

Transportation References and Bibliography

Questions dealing with transportation which may arise during the evaluative process can be directed to a range of sources who are available for purposes of local assistance. The following list is not intended to suggest an ordering of sources, but only possible sources of information and assistance.

The following transportation Bibliography is provided as an up-to-date selection of materials which may be of additional help.

References

Local County Road Engineer

Local District Office of the State Department of Transportation

County Road Administration Board

Director

6730 Martin Way, N. E.

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Office of the State Treasurer

Mass Transit Assistance for Municipalities

Legislative Building

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(206) 753-7437

Urban Arterial Board

Executive Secretary

Highway Administration Building

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Utilities & Transportation Commission
 Data Research and Planning
 Environmental Section
 Transportation Research Section
 Highways-Licenses Building, 7th Floor
 Olympia, WA 98504
 (206) 753-6423

Washington State Aeronautics Commission
 Assistant Director, Airport Development
 Technical & Financial Assistance for Airport Improvement & Development
 8600 Perimeter Road
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 Seattle, WA 98108
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Washington State Department of Transportation
 Highway Administration Building
 KF-01
 Olympia, WA 98504
 (206) 753-2931

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SCHOOLS

by

Abby Byrne¹Rationale

Public education stems from the American philosophy that every child should have an opportunity to obtain, at least, a basic education. This concept has grown to include a wide variety of educational services and facilities covering all age levels in our society. We now view education as a continuing process. As change occurs, it is vital that the educational services offered keep pace with a growing population.

Federal, state and local governments are all involved in educational activities. However, the major agency that fulfills educational needs is the local school district. Local school districts change in terms of classification as their enrollments increase. For example, small class B districts, which meet all the needs of most rural areas will become re-classified to A., AA and AAA districts as area population grows. As enrollments become larger, it is to be expected that a variety of changes in the school system will also change the character of the system.

The relationship between any development project and educational system needs should be examined carefully. The most critical element is the addition of pupils as a result of the project contributing to the school districts total enrollment. Accessibility to educational facilities is another important factor as this is necessary to achieve safety, convenience and cost efficiency. Transportation should be considered in examining any project in relation to schools. One may also anticipate future school requirements such

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as suitable locations for new facilities and the character and quality of such facilities. The provision of quality classroom education is the duty of the local school district. However, the costs and benefits of the education must be shared by both patrons of the district and the community at large.

Key Questions

An evaluation of development projects relative to school system impacts should be commenced by asking the following questions:

1. Can the projected enrollments be adequately handled by the existing educational facilities? Where are the nearest schools and what is the affected school district?
2. Will the proposed project affect the capacities of the existing schools? Will new facilities be required?
3. Will the proposed project affect the pupil/teacher ratios of these schools, thereby causing an adverse impact on the quality of education?
4. Is the location of schools in the project area such that there will be no undue hardship in terms of student travel distance and time?
5. If the development is projected as requiring new or expanded schools, what will be the cost?

Methodology

Any proposed project must be analyzed in terms of its anticipated demands upon local schools in terms of new and additional students. Residential projects will have a direct impact on school enrollments. Commercial, industrial and recreational projects can have an indirect impact if they create new employees and thus new families with school-age children in the area. These projects can also have an indirect environmental impact on schools by their proximity to school facilities. Potential school enrollments may be estimated by using the charts in the Criteria and Standards, which follow.

Criteria and Standards

Information is available from a variety of sources in regard to current school system standards which may require conformity. All projects should therefore be checked against prevailing legislated code requirements, if any, and comparison checks should be made using professional accredited criteria and standards not necessarily mandated by law.

Included herein are criteria and standards as provided by professional sources. They are general indicators and one should always look for requirements as set forth in the Revised Code of Washington and available local county and municipal codes.

SCHOOL ENROLLMENTS MULTIPLIERS BY DWELLING UNIT TYPE²

<u>Dwelling Unit Type</u>	<u>K-6</u>	<u>7-9</u>	<u>10-12</u>
Single Family	.41	.08	.16
Duplex	.17	.04	.02
Condominium	.15	.08	.07
Apartments	.20	.06	.05
Mobile Homes	.17	.07	.07

SCHOOL SITE STANDARDS IN ACRES³

<u>Type of School</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
Elementary School	Min. 5 plus 1 for each 100 pupils	Min. 5 plus 1 for each 100 pupils	Min. 5 plus 1 for each 100 pupils	10
Middle School	Min. 10 plus 1 for each 100 pupils	Min. 20 plus 1 for each 100 pupils	Min. 15 plus 1 for each 100 pupils	30
High School	--	Min. 30 plus 1 for each 100 pupils	Min. 30 plus 1 for each 100 pupils	60

A - American Association of School Administrators, 1952

B - National Council on Schoolhouse Construction, 1958

C - Schneider, R. C. and C. E. Wilsey and School Planning Laboratory Staff, 1961

C - Engelhardt and Leggett, 1956

Note: These suggested guidelines are most applicable to rural areas.

²California, State of (1978) ECONOMIC PRACTICE MANUAL

³HUD (1975) INTERIM GUIDE FOR ENVIRONMENTAL ASSESSMENT. Washington, D. C., Office of Policy Development and Research.

GENERAL PUPIL/TEACHER/PRINCIPAL RATIOS⁴

<u>Position</u>	<u>Pupil Ratio</u>
Elementary teachers	22:1 Pupil/Teacher
Teachers, National Average	22.4:1 Pupil/Teacher
Principal, Asst. Principal	487:1 Pupil/Teacher
Support Staff	419:1 Pupil/Support Staff
Central Office Administration	698:1 Pupil/Central Office Administration

SPACE PER STUDENT⁵

<u>School Type</u>	<u>Square Footage in Classroom</u>
K-6	55
7-8	75
9-12	85

NEW FACILITY REQUIREMENTS

<u>School Type</u>	<u>Total Enrollment</u>	<u>Class Size</u>	<u>Families Served</u>	<u>Land Requirements</u>
Grade School	300	20-30	1,420	12-14
Junior High	1,200	30-32	5,000	24-25
Senior High	1,800	30-35	7,000	40-42

⁴HUD (1975) INTERIM GUIDE FOR ENVIRONMENTAL ASSESSMENT

⁵Ibid.

Schools References and Bibliography

Questions dealing with school systems which may arise during the evaluative process can be directed to a range of sources who are available for purposes of local assistance. The following list is not intended to suggest an ordering of sources, but only possible sources of information and assistance.

The following Schools Bibliography is provided as an up-to-date selection of materials which may be of additional help.

References

Association of Educational Service Districts
Executive Secretary
200 East Union Avenue
Olympia, WA 98504

Commission for Vocational Education
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Olympia, WA 98504

Department of General Administration
Facilities Planning
106 Maple Park
Olympia, WA 98504

Department of Fiscal Management
Population, Enrollment & Economic Studies
101 House Building
Olympia, WA 98504
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State Board for Community College Education
Educational Services & Analysis
319 E. Seventh Avenue, WEA Building
Olympia, WA 98504
206-753-2000

Superintendent of Public Instruction
Old Capitol Building
Olympia, WA 98504
206-753-6738

Statistical Information Services
Superintendent of Public Instruction
Old Capitol Building
Olympia, WA 98504
206-753-1700

Washington State School Director's Association
200 East Union Avenue
Olympia, WA 98504
206-753-3305

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UTILITIES

by

Dr. Joseph Luther¹Rationale

Utilities are provided by both private and public organizations for the benefit of the community. As a general welfare consideration, it is the responsibility of the local government to ensure the adequate provision of utilities. These include utilities such as water systems, sewer systems, water and wastewater treatment facilities, storm water systems, and solid waste disposal facilities.

An adequate water supply both in terms of quality and quantity, is a critical factor in the location of a project. Water supply must be investigated in terms of availability and potential capacity. Sewerage generated by the project is another factor that must be adequately addressed, as well as the treatment facility for wastewater. This must be related not only to levels created by new residents, but also in terms of the ability of the soils and water of the area to support these facilities.

Storm water management is the control of surface water movements. It is necessary to pay attention to this factor in order to prevent flooding of residential and other areas, and to prevent contamination of surface and ground waters in the area. This potential should then be investigated in terms of potential storm rainfall, as well as the anticipated impervious surfaces to be built and the amount of water which must be dealt with as it moves from the site.

Solid waste management essentially deals with sanitary landfills. Demand for landfill space must be considered in terms of the potential cubic yards of

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fill which a proposed project is anticipated to generate. Also this yardage must be considered in terms of the life of the sanitary landfill which will be used as a disposal site. If new sites are required, these must be carefully considered on the basis of environmental capability.

Key Questions

An evaluation of development projects relative to availability and adequacy of utilities should be commenced by asking the following question.

1. Is water available to the proposed project site? If yes, what is the capacity of this water system?
2. How much water (gallons per person per day) will the proposed project require? Where will this water come from? If from wells, will it mean a draw-down of neighboring wells?
3. Is a sewer system available to this site? If yes, what is the capacity of this system. If no, what are the potentials of the site soils for septic systems?
4. How much wastewater will the proposed project generate? Where will it be treated? If with septic systems, what is the depth to the water table and the permeability of the soils. Can such systems be used on this site?
5. How much storm water (gallons per minute) will be created by a maximum potential storm on this site? Where will this water go? Will it affect nearby properties or streams or ground water? Will dry wells be used?
6. How much solid waste (pounds per day) will the proposed project create? Where will this be disposed of and what is the capacity and life of the site?

Methodology

To determine potential impacts upon existing water systems, you must know the capacity of these systems and the amount of flow available from water lines in the area. You must remember the required storage and fire flows required for insurance purposes. Compare the potential consumption

rates against the existing capacity. If wells are to be used, compare consumption rates against available flow from the well to determine if a drawdown is potential.

To determine potential impacts on wastewater and sewer systems, compare the potential wastewater which will be generated by the project with the capacity of the existing system. If it will exceed the capacity of the system, expansion or a new system may be required. If septic systems are anticipated, you must determine if the area's soils and water table will permit such a system.

Storm water must be determined on the basis of the maximum probable one-hour rainfall in your area. This must then be compared to the amount of impervious surface the proposed project will have. From this, your engineer may determine the potential storm water which the project will generate and which must be disposed of. You will also want to note depth to ground water, location of nearby streams, or other sensitive receptors of storm water run-off.

Solid waste may be calculated on the basis of pound per person per day or pounds per household per day. This, when converted to cubic yardage, will give you a good approximation of the demand which the project will place on your sanitary landfill. This must be compared with the capacity and life of this landfill.

Criteria and Standards

Information is available from a variety of sources in regard to current utilities standards which may require conformity. All projects should therefore be checked against prevailing legislated code requirements, if any, and comparison checks should be made using professionally accredited criteria and standards not necessarily mandated by law.

Included herein are criteria and standards as provided by professional sources. They are general indicators and one should always look for requirements as set forth in the Revised Code of Washington and available local county and municipal codes.

TYPICAL DAILY WATER CONSUMPTION²

<u>Land Use Type</u>	<u>Daily Consumption</u>
Residential	175 gallons per person daily
Public (Schools, Hospitals, etc.)	15 gallons per person daily
Commercial (Large apartments, businesses, etc.)	23 gallons per person daily
Industrial	20 gallons per person daily
Agriculture and Irrigation	14,000 gallons per connection daily

TYPICAL WASTEWATER GENERATION³

<u>Land Use Type</u>	<u>Daily Generation</u>
Single Family Residential	67 gallons per person daily
Multi-Family Residential	55 gallons per person daily
Commercial	30 gallons per person daily
Major Cannery	500 gallons per employee daily
Diversified Manufacturing	400 gallons per employee daily
Minimal Manufacturing	175 gallons per employee daily

² California, State of (1978) ECONOMIC PRACTICE MANUAL

³ IBTD

TYPICAL SOLID WASTE GENERATION⁴

<u>Land Use Type</u>	<u>Daily Generation</u>
Residential	2.4 pounds per person daily
Commercial	0.1 pounds per sq. ft. daily
Streets	60 pounds per person per year
Sewage Residues	100 pounds per person per year
Industrial Residues	100 pounds per person per year

<u>Type Waste</u>	<u>SOLID WASTE DENSITIES⁵</u> <u>POUNDS PER CUBIC YARD</u>		
	<u>Storage</u>	<u>In Truck Compacted</u>	<u>In Landfill Compacted</u>
Residential Refuse	120-250	350-650	600-1,000
Commercial Refuse	120-170	350-650	600-1,000
City Street Refuse	200	250-300	300-1,200
Sewage Residue			800-1,600
Demolition/Construction, Mixed Wood			600-1,000
Concrete, Brick Asphalt			1,500-2,200

⁴IBID⁵IBID

Utilities References and Bibliography

Questions dealing with utilities which may arise during the evaluative process can be directed to a range of sources which are available for purposes of local assistance. The following list is not intended to suggest an ordering of sources, but only possible sources of information and assistance.

The following utilities Bibliography is provided as an up-to-date selection of materials which may be of additional help.

References

Office of Land Programs
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Office of Water Programs
Department of Ecology
Olympia-Lacey, Washington 98504
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Municipal Research & Services Center of Washington
4119 Brooklyn Avenue, N.E.
Seattle, Washington 98105
206-543-9050

Washington State Utilities & Transportation Commission
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2. Environment
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PUBLIC SERVICES & FACILITIES

by

Abby Byrne¹Rationale

Government is responsible for providing and administering public services as well as for constructing and operating those facilities where public service activities are to occur. Some of these services and facilities are mandated by legislation and others are optional services designed to service an area's special needs. All public services and facilities are to benefit the general health, welfare and safety of the community. Some public services and facilities must be supported completely by local government, while others will be financed in part or whole by state and federal funding.

Public services and facilities may be divided into three broad categories: general government, community, and recreational. General government includes the legislative body, the other elected and appointed officials, the courts, staff, and capital construction, maintenance and operation of services and facilities. Community services are special activities that reflect the needs and preferences of the community. Recreational services and facilities include program and facilities designed to enhance the residents' opportunities to enjoy their leisure time.

The probable impact of a proposed project on public services and facilities will depend upon the size of the project. These broad categories are not sensitive to small population changes or minor changes in location. They are, however, very sensitive to socio-cultural factors and changes. For example, a development project might be expected to require new or additional community related services while another project might be expected to require new or additional recreational services.

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Key Questions

Public officials and community leaders should assess the impacts of development projects upon existing public service facilities by asking the following questions.

1. What public services and facilities are currently in the project area?
2. Will the proposed project affect these services or facilities, either directly or indirectly?
3. Will the proposed project require new or expanded services or facilities?

Methodology

Public services and facilities which fall into the following categories are discussed in separate sections of the Guide:

1. Educational Facilities and Services.
2. Employment.
3. Commercial Facilities.
4. Health Care Facilities and Services.
5. Utility Services and Facilities.
6. Fire and Police Services.
7. Transportation Facilities and Services.

This section will focus on governmental, community and recreational facilities and services not previously discussed. In terms of governmental services, you should review the existing organizational structure and process of the local government and other governmental units which may be affected by the proposed project. Will the proposed action, either directly or indirectly require additional staff or facilities? This should be considered in terms of the community's administrative offices, building inspection office, planning department, and the judiciary staff. While no specific criteria are available, you should be able to determine if the proposed action will generate

needs in excess of the response capacity of the existing organizational structure and process.

Efforts should be made to ensure that a wide variety of community services are available and easily accessible. From the existing land use maps and/or community facilities maps available from the Planning Department, locate these community services in relation to the proposed project if any exist. Using the information available from the transportation section, identify all available transportation routes between the community facilities and the project. Potential problems in access should be noted. The adequacy of these facilities may be determined by site visits or through discussions with agency heads and civic leaders.

Recreational facilities should also be reviewed in relationship to the proposed project. You will want to identify those recreational facilities in the vicinity of the proposed project or those on-site facilities which will be used by the project residents. The local recreational department, if one exists, should be contacted to determine if the project can be accommodated without straining the existing facilities. Use the guidelines in the Criteria and Standards Section as a general direction for determination of adequate facilities.

Criteria and Standards

Information is available from a variety of sources in regard to current standards set which may require conformity. All projects should therefore be checked against the prevailing legislated code requirements, if any, and comparison checks should be made using professional accredited criteria and standards not necessarily mandated by law.

Included herein are criteria and standards as provided by professional sources specifically directed at public services facility considerations. They are general indicators and one should always look for minimal requirements as set forth in the Revised Code of Washington and available local county and municipal codes.

GUIDELINES FOR DETERMINING LIBRARY SERVICES, FACILITIES DEMANDS²

Population Served	Shelving Space ¹		Amount of Floor Space	Reader Space	Staff Work Space	Estimated Additional Space Needed ³	Total Floor Space
	Size of Book Collection	Linear Feet of Shelving ²					
Under 2,499	10,000 vol.	1,300 linear ft.	1,000 sq. ft.	Min. 400 sq. ft. for 13 seats, at 30 sq. ft. per readers space	300 sq. ft.	300 sq. ft.	2,000 sq. ft.
2,500-4,900	10,000 vol. plus 3 bks. per capita for pop. over 3,500	1,300 linear ft. Add 1 ft. of shelving for every 8 bks. over 10,000	1,000 sq. ft. Add 1 sq. ft. for every 10 bks. over 10,000	Min. 500 sq. ft. for 16 seats. Add 5 seats per M. over 3,500 pop. served, at 30 sq. ft. per reader space	300 sq. ft.	700 sq. ft.	2,500 sq. ft. 0.7 sq. ft. per capita, whichever is greater
5,000-9,999	15,000 vol. plus 2 bks. per capita for pop. over 5,000	1,875 linear ft. Add 1 ft. of shelving for every 8 bks. over 15,000	1,500 sq. ft. Add 1 sq. ft. for every 10 bks. over 15,000	Min. 700 sq. ft. for 23 seats. Add 4 seats per M. over 5,000 pop. served at 30 sq. ft. per reader space	500 sq. ft. Add 150 sq. ft. for each full time staff member over 3	1,000 sq. ft.	3,500 sq. ft. 0.7 sq. ft. per capita, whichever is greater
10,000-24,999	20,000 vol. plus 2 bks. per capita for pop. over 10,000	2,500 linear ft. Add 1 ft. of shelving for every 8 bks. over 20,000	2,000 sq. ft. Add 1 sq. ft. for every 10 bks. over 20,000	Min. 1,200 sq. ft. for 40 seats. Add 4 seats per M. over 10,000 pop. served, at 30 sq. ft. per reader space	1,000 sq. ft. Add 150 sq. ft. for each full time staff member over 7	1,800 sq. ft.	7,000 sq. ft. or 0.7 sq. ft. per capita whichever is greater
25,000-49,999	50,000 vol. plus 2 bks. per capita for pop. over 25,000	6,300 linear ft. Add 1 ft. of shelving for every 8 bks. over 50,000	5,000 sq. ft. Add 1 sq. ft. for every 10 bks. over 50,000	Min. 2,250 sq. ft. for 75 seats. Add 3 seats per M. over 25,000 pop. served at 30 sq. ft. per reader space	1,500 sq. ft. Add 150 sq. ft. for each full time staff member over 11	5,250 sq. ft.	15,000 sq. ft. or 0.6 sq. ft. per capita whichever is greater

Source: American Library Association, Subcommittee on Standards for Small Libraries, Public Library Association, INTERIM STANDARDS FOR SMALL PUBLIC EDUCATION GUIDELINES TOWARD ACHIEVING THE GOALS OF PUBLIC LIBRARY SERVICE. (Chicago: The Association, 1962), p. 15. This brief 16-page report is based on standards set forth in ALA's PUBLIC LIBRARY SERVICE, A GUIDE TO EVALUATION WITH MINIMUM STANDARDS. It is intended to provide interim standards for libraries serving populations of less than 50,000 until these libraries can meet the standards of ALA's PUBLIC LIBRARY SERVICE.

¹ Libraries in systems need only to provide shelving for basic collection plus number of books on loan from resource center at any one time.

² A standard library shelf equals 3 linear feet.

³ Space for circulation desk, heating and cooling equipment, multipurpose room, stairways, janitors' supplies, toilets, etc., as required by community needs and program of library services.

² Goodman and Freund. Principles and Practices of Urban Planning. Washington, D.C.: International City Management Association, 1968.

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SUGGESTED MINIMUM RECREATION STANDARDS

<u>Facility</u>	<u>Ages Served</u>	<u>Acres of Space</u>	<u>Service Radius</u>	<u>One Acre Serves Total Population of:</u>
Play lot	Pre-school	1/8	1 block	800
Playground	5-14	3	1/2 mile	1,000
Neighborhood Park	All ages	2	1/2 mile	800
Playfield	Teenage and Adult	12	City (Community)	800
Community Park	All ages	30	City (Community)	250

A minimum suggested for separate playground serving small communities:

<u>Population</u>	<u>Children</u>	<u>Number of Acres</u>
2,000	450	3.25
3,000	600	4.0
4,000	800	5.00
5,000	1,000	6.00

Per 50,000 persons
 25 miles of hiking trails
 25 miles of cycling trails
 5 miles of bridle trails

Source: National Park and Recreation Association

RECREATIONAL DEMAND FOR SPECIFIC FACILITIES

<u>Specific Activity</u>	<u>Average Population Served</u>
Swimming Pool	3 percent of population at a given time with 12 square feet of water per swimmer
Golf (18-hole)	50,000
Recreation building (1-3 acres)	20,000
Tennis courts	1 court per 2,000
Baseball	1 diamond per 6,000
Softball	1 diamond per 3,000

Source: National Park and Recreation Association

Public Services and Facilities References and Bibliography

Questions involving public service and facility impacts which may arise during the evaluation process may be directed to a variety of sources available for purposes of local assistance. Most of the data necessary can be obtained from local sources. The following list is not intended to suggest an ordering of sources, but only possible sources of information and assistance.

The following Bibliography is provided as a brief up-to-date selection of materials which may be of additional help.

References

Local Governmental Body

Local Planning Department

Office of the State Auditor
Legislative Building
Olympia, Washington 98504
206-753-3548

Property Tax Program Coordinator
Department of Revenue
301 Evergreen Plaza
Olympia, Washington
206-753-2044

Washington State Data Processing Authority
Olympia, Washington 98504
206-753-5445

Planning and Community Affairs Agency
400 Capital Center Building
Olympia, Washington 98504
1-800-562-5677

Office of Financial Management
House Office Building
Olympia, Washington 98504
206-753-4562

Bibliography

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Department of Personnel
600 South Franklin Street
Olympia, Washington 98504
206-753-5383

Department of General Administration
Olympia, Washington 98504
206-753-5467

Washington State Library
Olympia, Washington 98504
206-753-5589

Washington State Parks and Recreational Commission
7150 Cleanwater Lane
Olympia, Washington 98504
206-753-5763

Interagency Committee for Outdoor Recreation
4800 Capitol Blvd. MS-KY-11
Olympia, Washington 98504
206-753-7140

Local Community Action Agency,
Various programs aimed at the low-
income, elderly and the handicapped;
including Head Start, Food & Nutrition,
Home Weatherization

Economic Assistance Authority
Washington State Department of
Commerce & Economic Development
101 General Administration Building
Olympia, WA 98504
(206) 753-3065

Property Tax Program Coordinator
Department of Revenue
301 Evergreen Plaza
Olympia, WA 98504

Washington State Department of Natural Resources
Division of Recreation
Public Lands Building
Olympia, WA 98504

- Rimbey, Neil R. "Growth Impacts on Public Service Expenditures." Western Rural Development Center, Oregon State University. Coping With Growth Series.
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POLICE AND FIRE SERVICES

by
Abby Byrne¹

Rationale

Police and fire protection are essential services provided for the community's safety and welfare. As growth occurs, priorities for the delivery of police and fire services often change and the various needs of each jurisdiction must be balanced with available resources. These services are usually funded from the general fund, property taxes, special levies and bonds.

Police are the instruments of the community used to maintain law and order. Police draw their authority from the will and consent of the community. The existence of crime is a daily reality and the impact of crime goes far beyond a casual review of statistics. As areas grow and change, maintaining law and order requires far more than just making arrests for violations of the law. Duties of law enforcement agencies include crime prevention, regulatory duties, traffic, violations of statutes and minor complaints, auxiliary services such as record keeping, the care and custody of prisoners, and public service in general.

The top priority of fire protection services is to keep injury and loss of life, as well as property losses from fires, to a minimum. The quality of fire protection services are usually measured in terms of premium rates for fire insurance. Other activities of fire departments include fire prevention, investigation of causes and origins of every fire involving loss of life or property, permit application and inspections, and other services including record keeping, emergency medical services, rescue, and public service in general.

¹Graduate Research Assistant, Department of Urban and Regional Planning, Eastern Washington University.

As local governments examine potential projects the level, demands and costs of police and fire services cannot be ignored. Priority has to be given to the provision of these life saving services. The cost of providing such services should be estimated with reference to the anticipated growth of the community as caused directly and indirectly by a proposed project.

Key Questions

Public officials and community leaders should assess development project impacts upon existing police and fire services by asking the following questions:

1. Are the present police and fire services adequate to serve the existing community?
2. Will the proposed project require new or altered fire and/or police services?
3. Does the project require any special services?
4. What is the additional cost of these new or altered services?
5. What are the direct, indirect and cumulative demands which the proposed project may incur for the community

Methodology

In order to determine probable impacts to these services, you must first understand the existing services and their adequacy. The local fire and police should be able to provide you with information. These agencies will also be able to estimate the impact a proposed project will have on their services. For law enforcement, you should consult the state, county and community law enforcement agencies. For fire protection, you should contact community and county, as well as fire district offices. In some areas you will also want to contact state agencies such as the Department of Natural Resources and federal agencies such as the U.S. Forest Service.

These agencies will need to know the location and character of the proposed project. In terms of character, they will need to know the anticipated square footage, height and bulk, type of materials used in construction, any materials which will be processed and/or stored on the site, and the safety design features of the project. With this information, they will be able to calculate fire response times, patrol demands, and other services which will be required by this project.

Criteria and Standards

Information is available from a variety of sources in regard to current police and fire service standards which may require conformity. All projects should therefore be checked against prevailing legislated code requirements, if any, and comparison checks should be made using professional accredited criteria and standards not necessarily mandated by law.

Included herein are criteria and standards as provided by professional sources. They are general indicators and one should always look for requirements as set forth in the Revised Code of Washington and available local county and municipal codes.

The size of the police agency is usually determined by per capita property values, per capita crimes against individuals and property, and by unemployment. The level and type of demand for police services, as shown in the following chart, will vary with land use and with the specific characteristics of the area.

TYPE OF POLICE SERVICE DEMANDED
BY LAND USE CATEGORY²

<u>Land Use</u>	<u>Service Demanded</u>	<u>Level of Demand</u>
Residential	Service Calls (Non-Crime)	High
	Prevention, Deterrence of Crimes Against People	Moderate-High
	Suspect Apprehension	Moderate
	Traffic	Light
Industrial	Prevention, Deterrence of Crimes Against Property	High
	Traffic	Low-High
	Service Calls (Non-Crime)	Low
	Suspect Apprehension	Low
	Prevention, Deterrence of Crimes Against People	Low-High
Commercial	Traffic	High
	Prevention, Deterrence of Crimes Against People and Property	Moderate
	Service Calls (Non-Crime)	Low

FACTORS INFLUENCING LEVELS OF
POLICE SERVICE DEMAND

<u>Land Use</u>	<u>Increase</u>	<u>Decrease</u>
Residential	Population Density:	Security design features including:
	Vacancy-Transiency Isolated urban land uses Unemployment	Controlled exits, entrances, high visibility, good lighting, secure structures. Public Transportation Private Patrol

²California, State of (1978), ECONOMICS PRACTICE MANUAL

<u>Land Use</u>	<u>Increase</u>	<u>Decrease</u>
Industrial	Vacancy-Transiency Building density Traffic Volumes	Security Design Features including: (see above) Workable traffic circulation and parking plan.
Commercial	Same as Industrial	Security Design Features including: Public Transportation. Workable traffic circulation and parking plan.

ESTIMATING NEED FOR POLICE SERVICE³

<u>Land Use</u>	<u>Service Demanded</u>
Residential	1.2 to 1.9 policemen per 1,000 population
Commercial and Industrial	Traffic control at peak hours. Parking control. Foot or car patrol at night. Or private surveillance.
Public including Schools, Parks, Recreation and Cultural Centers	Traffic control at peak hours. Parking control. Community educational programs.

For fire protection services, as in police, you should call for advice from the local agencies. The first consideration may be to determine the required water supply or fire flow needed to extinguish a fire. The basic formula used for insurance underwriting is as follows:

FIRE FLOW DETERMINATION

$$F = 18 C(A)^{0.5} \text{ where}$$

- F = the required fire flow
- C = coefficient related to the type of construction
 - C = 1.5 for wood construction
 - C = 1.0 for ordinary construction
 - C = 0.8 for noncombustible construction
 - C = 0.6 for fire-resistant construction
- A = the total floor area (including all stories but excluding the basement). For fire-resistant buildings, consider the six largest successive stories if the vertical openings are unprotected. If the vertical openings are properly protected, consider only the three largest successive stories.

³Ibid.

Having projected the requirements for an adequate fire protection service you will want to determine the location of fire departments. The following table shows the number of companies needed within a specified distance of the fire flow or water supply.

ESTIMATING NEEDS FOR FIRE COMPANIES⁴

Water Gallons per Minute	First Due				First Alarm				Multiple Alarm			
	Engine No.	Mi.	Ladder No.	Mi.	Engine No.	Mi.	Ladder No.	Mi.	Engine No.	Mi.	Ladder No.	Mi.
Less than 2,000	1	1½*	*1	2**	**2	4	*1	2**	**2	4	*1	2**
2,000	1	1½*	*1	2**	2	2½	*1	2**	2	2½	*1	2**
2,500	1	1½	*1	2	2	2½	*1	2	2	1½	*1	2
3,000	1	1½	*1	2	2	2½	*1	2	3	3	*3	2
3,500	1	1½	*1	2	2	2½	*1	2	3	3	*1	2
4,000	1	1½	1	2	2	2½	1	2	4	3½	1	2
4,500	1	1½	1	2	2	2½	1	2	4	3½	1	2
5,000	1	1	1	1½	2	2	1	1½	5	3½	2	2½
5,500	1	1	1	1½	2	2	1	1½	5	3½	2	2½
6,000	1	1	1	1½	2	2	1	1½	6	4	2	2½
6,500	1	1	1	1½	2	2	1	1½	6	4	2	2½
7,000	1	1	1	1½	2	1½	1	1½	7	4	3	3½
7,500	1	1	1	1½	2	1½	1	1½	8	4½	3	3½
8,000	1	1	1	1½	2	1½	1	1½	9	4½	3	3½
8,500	1	1	1	1½	2	1½	1	1½	9	4½	3	3½
9,000	1	¾	1	1	3	1½	2	2	10	4½	4	4
10,000	1	¾	1	1	3	1½	2	2	12	5	5	4½
11,000	1	¾	1	1	3	1½	2	2	14	5	6	5
12,000	1	¾	1	1	3	1½	2	2	15	5	7	5

* Where there are less than 5 buildings of a height corresponding to 3 or more stories, a ladder company may not be needed.

** Same as first due where only one engine is required in the municipality.

* May be increased to 2 miles for residential district or 1- and 2-family dwellings, and to 4 miles where such dwellings have an average separation of 100 feet or more.

** May be increased to 3 miles for residential districts of 1- and 2-family dwellings, and to 4 miles where such dwellings have an average separation of 100 feet or more.

⁴ deChiara, J. and Koppleman, L. Planning Design Criteria. Van Nostrand-Reinhold, New York, 1969.

In terms of personnel, a one-engine company requires three to six positions; a one-ladder company will require five to eight positions, depending on rating. About 3.5 firemen per position will be required for round-the-clock protection.

Police and Fire References & Bibliography

Questions dealing with police and fire services which may arise during the evaluation process can be directed to a range of sources who are available for purposes of local assistance. The following list is not intended to suggest an ordering of sources, but only possible sources of information and assistance.

The following police and fire service Bibliography is provided as an up-to-date selection of materials which may be of additional help.

References

Local Law Enforcement Agency

Local Fire Chief

Board for Volunteer Fireman
Temple of Justice
Olympia, WA. 98504

Chief Fire Marshall
Technical assistance related to fire and life safety
Office of Insurance Commissioner & State Fire Marshall
Insurance Building
Olympia, WA. 98504
206-753-3605

Director of Crime Prevention Section
Crime prevention advisory assistance
Office of the Attorney General
Room 625, Dexter Horton Building
Seattle, WA. 98104
206-464-7676

Division of Fire Control
Rural community fire protection assistance
Department of Natural Resources
Public Lands Building
Olympia, WA. 98504
206-753-5350

Washington State Department of Emergency Services
Search & Rescue
4220 East Martin Way
Olympia, WA. 98504
206-753-5255

Washington State Criminal Justice Training Commission
Training programs for criminal justice employees
Printed material: "Annual Training Catalog"
Ms PW-11
Olympia, WA. 98504
206-753-7450

Washington State Patrol
General Administration
Olympia, Washington 98504
206-753-6540

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United States Law Enforcement Assistance Administration. "Guide for Discretionary Grant Programs." Washington, D.C., U.S. Government Printing Office, September, 1978.

Washington Association of Sheriffs and Police Chiefs. "Washington Law Enforcement Standards." Olympia, WA., 1977.

PUBLIC HEALTH

by

Samson Fadare¹Rationale

Public health includes a wide range of services and activities in the area of community, physical, mental and environmental health. It is generally held that programs in the public health sector are most effective when the local government acts as the deliverer of services. While local governments are mandated by legislation to provide these services it is important to recognize the multi-jurisdictional responsibility for public health by state and federal entities. In addition quasi-public agencies and private agencies also play a key role in the delivery and implementation of public health activities and services.

Historically in the United States, government has acted to ensure that citizens experience a minimum of suffering, disability, premature death and the attendant cost due to chronic and communicable disease. There are three major reasons why government is involved in public health:

1. The issue or problem is beyond the resources of individuals or private groups;
2. There is a need to provide access to needed services by people and groups who, because of age, poverty, misbehavior or other circumstances, are unable to provide these services for themselves; and
3. Many public health activities require governmental regulations; such as health inspections and certification.

The demand of public health services include disease prevention and control, environmental control,² vital record keeping, family planning, health education, laboratory services, emergency medical services, home health services and inspections. In addition to the public services, adequate health facilities and

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²The Environmental functions of public health are administered by the State Department of Ecology.

medical personnel are necessary to the quality of public health in all communities.

The single most important determinant of cost in public health care is population. Public health is funded with federal, state and local monies. As growth occurs, the increase in funding at the local level may be influenced not only by a general population increase, but also by the type of project under review, the number of additional people in need of services and facilities and the demand for new services or the upgrading of existing services and facilities desired by the community.

Key Questions

Public officials and community leaders should assess the development project's impact upon public health services by asking the following questions:

1. Where is the proposed project located relative to medical facilities?
2. What is the travel time from the proposed facility to the nearest medical center with inpatient care? With outpatient care? With emergency services?
3. How will the proposed project affect these existing facilities? Will new facilities or medical personnel be required as a result of the proposed project?
4. Will the proposed project create any new health hazards during its construction or operation?

Methodology

In order to assess the probable impact of the proposed project on the community's health resources, you should have the following information:

1. A map showing the location of all public medical facilities, clinics, offices and emergency medical services. Each facility should have travel times shown as 15 minutes for emergency services, 30 minutes for ambulatory care, 90 minutes for inpatient care, and 240 minutes for specialist care-inpatient. This may be indicated by showing these

travel times as circles around the existing facilities. Note where gaps appear in unserved or underserved areas of your county or community.

2. A description of each facility, clinic or office indicating services and staff available and capacity for patient load.

With the information available, you may then compare the location of the proposed project with the services available in that area. If adequate services are not available, then the provision of such services must be a consideration in the approval of the project under review.

As a means of determining what impacts a new population will mean to existing medical facilities and personnel, please refer to the charts in the Criteria and Standards part of this section.

Criteria and Standards

Information is available from a variety of sources in regard to current public health standards which may require conformity. All projects should therefore be checked against prevailing legislated code requirements, if any, and comparison checks should be made using professionally accredited criteria and standards not necessarily mandated by law.

Included herein are criteria and standards as provided by professional sources. They are general indicators and one should always look for requirements as set forth in the Revised Code of Washington and available local county and municipal codes.

TYPICAL HEALTH RESOURCES REQUIRED
PER 1,000 POPULATION⁵

<u>Resource</u>	<u>Requirement</u>
Primary M.D.	0.7/1,000
Specialist M.D.	1.0/1,000
Registered Nurses	4.0/1,000
Hospital Beds	5.0/1,000
Dentists	0.5/1,000
Pharmacists	0.6/1,000
Optometrists	0.09/1,000

Public Health References and Bibliography

Questions dealing with public health which may arise during the evaluation process can be directed to a range of sources who are available for purposes of local assistance. The following list is not intended to suggest an ordering of sources, but only possible sources of information and assistance.

The following public health Bibliography is provided as an up-to-date selection of materials which may be of additional help.

References

Local Health Professionals

Industrial Safety and Health Division
Washington State Department of Labor & Industries
308 East Fourth Avenue
Olympia, WA 98504

Washington State Department of Social & Health Services

1. Analysis & Information Services Division
2. Client & Community Relations Division
3. Community Services
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111

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⁵ HEW (1976)

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SOCIAL IMPACT ASSESSMENT

by

Robert E. Howell¹Lorna Michael Butler²Rationale

Any proposed development project will have a social dimension which local officials and community leaders should speak to in the project planning stage, before the effects actually occur.

The social dimension concerns the day-to-day life styles of people living within the impact zone. An assessment of the impacts upon this social dimension should attempt to predict and evaluate the immediate and long term life style changes. Projects will be experienced in a community through changes in the socio-cultural milieu of values, social relationships and community structure. Community leaders should be aware of the change possibilities for community residents and should endeavor to be in a position to ease any possible negative social and cultural impacts of growth.

A Social Impact Assessment (SIA) is a means of achieving this anticipatory posture by communities in regard to changes. It is a procedure for determining the anticipated consequences of growth and development, and thereby forestalling or offsetting adverse effects which may arise.

The impact components that comprise an SIA are:

1. Population movement impacts. Population change is one of the most visible signs of growth anywhere. Communities often experience extremely rapid growth as a result of high technology developments such as building a nuclear plant, a dam, or a large scale industrial plant. Where the local labor supply is inadequate to meet the employment demand, new workers and their families will migrate or commute into the area. Population movement impacts generally accompany economic impacts

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of growth and may precede other social, cultural, fiscal, political, and environmental impacts. Population movement impacts will be determined by the size, composition, and distribution of a population associated with a project as newcomers interact with current residents in the local setting.

2. Community structure impacts. Community structure impacts occur within a community as it becomes more diverse. Under circumstances of growth and development people within the community may no longer understand previously accepted rules of behavior. There is commonly a trend toward solving problems through the adoption of more formal or professional means throughout most areas of community life. For example, youth problems which traditionally are handled informally, or at home by neighbors, are being referred to social workers. The decisions in a community which were traditionally done through informal agreements between residents are increasingly done through formal means such as subdivision and housing ordinances.
3. Community cohesion impacts. Related to the growing diversity between groups in the community and differing values, are community cohesion impacts.

These impacts are of initial importance. They can lead to serious breakdowns in communication between long-term community residents and a deterioration in the community's ability to manage growth.

Studies of communities undergoing rapid change show that long-term residents develop a feeling of not knowing their own town. A constant parade of new faces in the community and within local organizations leads to a lessening of community identity on the part of the long-time residents. Long-term residents often perceive newcomers as not

integrating into the community. This may result from the different values and lifestyles of newcomers compared to long-time residents. For example newcomers may be highly mobile and transient, while long-term residents value stability. Under such conditions, tension may develop among residents as conflicting positions concerning community growth issues begin to emerge.

4. Differential distributional impacts. Differential distributional impacts occur when rapid growth situations result in costs and benefits not being equally shared by all people. Research studies into the impacts of rural industrial development show that some persons are likely to be adversely affected relative to others. At the same time the benefits of growth may be disproportionately distributed among other members of the community.
5. Individual stress impacts. Individual stress impacts are often associated with conditions of rapid community growth. Individual stress problems in contemporary boom towns have been identified by "the four D's" - drunkenness, depression, delinquency, and divorce. Such problems occur among both long-term residents and newcomers undergoing adjustment to the new socio-cultural environment. Other evidence of stress related problems under circumstances of rapid social change are increased suicide and child abuse rates. This is not to say that mental breakdowns and psychological problems will increase in communities undergoing rapid growth, but the chances of such problems are greater.
6. Organizational stress impacts. Organizational stress impacts are also consequences of growth that local leaders can anticipate under conditions of rapid change. Local governments, experience new and expanded demands for public services. The police department is required to respond to

more traffic problems and an increased crime rate. The planning department is overwhelmed with requests for building permits and other development related activities. Social service agencies experience a rapid increase in case loads and other requests for services.

These developments will often result in the generation of conflict between individuals and organizations. Under such conditions individuals and organizations cannot adequately provide for community services and community problem solving.

Key Questions

Several key questions can help guide public officials and community leaders when researching the social impacts of community growth. The SIA study should concentrate on asking:

1. What people are likely to be affected by new development?
2. How many people are there in terms of the groups affected?
3. What positive and negative benefits and/or consequences will accrue each group of people, and how severe or advantageous will the benefits and/or consequences be?
 - a. if the project is not implemented?
 - b. if it is implemented?
4. How receptive will the groups of people impacted be to the development?
5. What steps may be taken to minimize or mitigate negative impacts of the project if implemented?

Methodology

An SIA should provide community leaders and decision makers with factual information about the characteristics of the impacting element and the local community context, alternatives for mitigating growth-related problems, and consequences of each alternative upon which policy judgements can be made.

The social impact assessment should contain:

1. An in-depth profile of the area or local setting to be impacted.
This should include descriptions of the history of the area, the population, informal and formal organizations, the social organizations, means of subsistence and the economy, belief and value systems, leisure and recreational opportunities, the power structure and political orientations, physical and mental health of the community and cultural interrelationships.
2. An in-depth profile of the project and its various components. This should include descriptions of the consequent employment population, its mobility patterns, its social organizations, its informal and formal organizations, its belief and value systems, its leisure and recreational interests, its political orientations, its physical and mental health, and its cultural interrelationships.
3. A summary of possible short and long-term socio-cultural impacts resulting from the merging of the impacting population group and the local residents. For example, increased contact between persons of differing values may lead to conflicts between new and long-time residents or between groups of long-time residents which can then lead to the isolation of groups and individuals in the short run and mental health problems in the long run.
4. An analysis of the implications of growth related stress. This should include a projection of stress consequences as seen in terms of increases in alcoholism, divorce rates, child abuse, and the number of suicides.
5. An analysis of the options or alternatives available for avoiding negative or disruptive impacts. This should include determination if new organizations should be developed for integrating new and

long-term residents within the local setting. It should include an assessment of the response capabilities and roles of existing organizations. It should seek to determine if existing public service facilities are adequate or if new facilities should be developed.

6. Proposals for easing or mitigating adverse effects which may occur.

This might entail recommending that a community council be formed to serve as a forum for new and long-term residents to voice concerns and to become better acquainted, a recreation program for youth be implemented and additional professional and administrative staff added to local government to provide the necessary experience and assistance for managing growth and mitigating growth-related problems.

Criteria and Standards

A valid SIA requires input from many sources. It needs the expertise of technical people such as planners and social scientists as well as the ideas and opinions of lay people, in particular those affected by the project such as residents, employees, taxpayers, and others.

As fundamental criteria a SIA should contain: a comprehensive community profile, a projection of changes that may occur in the future with and without the proposed development, an assessment of how things will change, an evaluation of the possible outcomes, and finally the possible ways of minimizing any negative effects.

Such a process will provide necessary information upon which to proceed based on considerations of:

1. magnitude and rate of change
2. duration of impacts
3. cumulative impacts

4. irreversibility of impacts
5. uniqueness of impacts
6. vulnerability of people to impacts
7. controversiability of impacts
8. disruptability of impacts

These are the standards against which projects should be measured. Against this background public officials and community leaders should be aware of prevailing legislated code requirements, if any, and comparison checks should be made using professionally accredited criteria and standards not necessarily mandated by law.

Social Impact Assessments References and Bibliography

Questions dealing with Social Impact Assessments which may arise during the evaluative process can be directed to a range of sources which are available for purposes of local assistance. The following list is not intended to suggest an ordering of sources, but only possible sources of information and assistance.

The following Social Impact Assessments Bibliography is provided as an up-to-date selection of materials which may be of additional help.

References

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ENERGY

by

Samson Fadare¹Rationale

Energy is the capability to do work. Every development project will require a given amount of energy converted into power. This energy/power is used in various construction projects to provide heat, and powering electrical devices or machinery. This need for energy and power will have a direct effect on the local economy for both the short and long-term.

The cost of energy consumed by a project can be viewed as an opportunity cost since the energy consumed by a project will not be available for other developments or for future expansion of existing developments. In the short-term, conservation measures included in a project will conserve the available supply of energy for other potential developments. At the same time such measures may ensure adequate energy for existing energy consumption and production awareness is necessary for an orderly pattern of growth. If new ideas and energy technologies are incorporated as part of a proposed project, a long-term benefit to the community will be obtained from a reduction of future energy and power demands.

Key Questions

An evaluation of development projects relative to energy should be commenced by asking the following questions:

1. Will the proposed project consume substantial amounts of energy?
2. What will be the demand on existing sources of energy?
3. Are there potential problems with the supply of energy for the project?

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4. Will the energy requirements exceed the capacity of the service utility company?
5. Will the development of new sources of energy be required?
6. Will the proposed project employ energy conservation techniques in site and structural design?

Methodology

The energy requirements of the proposed project should be identified and quantified where possible. This may be done by obtaining a detailed description of the projects energy requirements. The information necessary to an evaluation should be directed at determining:

1. Number and type of new structures.
2. Anticipated energy requirements of these structures.
3. Energy conserving aspects of the structures.
4. Energy conserving aspects of the site design.
5. Travel distances to community services and employment centers.

Criteria and Standards

The following are representative of criteria and standards used in analyzing energy impacts. Additional information is available from a variety of sources in regard to existing standards which may require conformity. All projects should be checked against prevailing legislated code requirements, if any, and comparisons should be made using professional accredited criteria and standards not necessarily mandated by law.

Energy requirements for most developments will depend upon the following factors:

1. Climate: temperature, wind, snow, sun.
2. Housing Type: single or multifamily, single story or high-rise, detached versus clustered.

3. Structural Configuration: floor area, geographic orientation, number and size of openings, building shape.
4. Style and Quality of Construction: materials, insulation, glazing.
5. Appliances: air conditioning, heating, lighting, refrigeration.
6. Life Style of Residents: Conspicuous consumption, etc.

Peak energy needs and average energy consumption of the project should be estimated from project plans, in consultation with local energy suppliers. For residential development, an approximate energy consumption rate is 12,000 kwh per year per dwelling unit. For commercial, industrial and large public structures, the project engineer and the local power company will have to determine the annual energy budget.

Site design measures for energy conservation include the clustering of structures to eliminate long roadways, excessive utility lines and maintenance costs. Large lot single family homes represent high energy consumption in terms of travel, maintenance and operation by local government. Specific energy conserving design features include orientation to sun and wind, use of vegetation for screening and wind control, and the provision of shelter by slope and location.

Energy conservation aspects of travel include the distance required to travel to receive community service, retail services and to reach employment centers. Large developments located in remote areas or on the fringe of urban centers are examples of energy consuming developments.

Energy References and Bibliography

Questions dealing with energy which may arise during the evaluation process can be directed to a range of sources which are available for purposes of local assistance. The following list is not intended to suggest an ordering of sources, but only possible sources of information and assistance.

The following energy Bibliography is provided as an up-to-date selection of materials which may be of additional help.

References

City, County, or Regional Planning Office

Local colleges and/or universities

Local Community Action Agency

Local Utility Companies

Washington State Energy Extension Service. Contact your local County Extension Agent or Washington State University.

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Washington State Planning and Community Affairs Agency
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Bibliography

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AESTHETICS

by

Dr. Joseph Luther¹Rationale

While the aesthetic or visual appearance of a proposed project may not seem like a factor which could impact the local community or cause a fiscal impact, there are some long-term implications which may indeed result in community costs or benefits. If a project presents a blighted appearance or contributes to a blighted situation, the action will cause a decline in neighboring property values. This, in turn, will lead to a decline in tax revenues and eventually services provided to this area will suffer. A vicious cycle may be set in motion in which property values continue to spiral downward. Finally, poor visual appearances may also cause the loss of future land development in the vicinity of this site.

Aesthetics will also affect community image, civic pride, retail sales and tourism. Care should be taken to assure that a project will not destroy scenic views that are valuable community resources. Aesthetic values should play a role in the preservation of the community's heritage and distinction.

Key Questions

An evaluation of development projects relative to aesthetics should be commenced by asking the following questions:

1. Will the design of the project contribute to the community's overall appearance?
2. Will the appearance of the project help maintain and enhance property values?
3. Does the project design have a distinctive appearance which represents the uniqueness of this community?

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4. Does the project fit into the surrounding neighborhood?
5. Will the project result in the destruction or obstruction of scenic views or areas?
6. Does the project reflect the heritage and culture of the area?

Methodology

An investigation or evaluation of a development project should start with site maps and sketches which show how the completed project will appear on the site, particularly in relation to surrounding properties. By comparing the visual appearance of the existing area with the project sketches, obvious changes can be identified, whether positive or negative. Attention should be paid to the following factors:

1. Amount of open space and vegetation to be removed.
2. Height of buildings in relation to other buildings in the area and any potential obstruction of views.
3. Forms of proposed structures in relation to forms of present structures. Particularly in terms of design character, style, color, shape, material, etc.
4. Removal or modification of any natural or man-made features which are considered a community resource because of their visual appearance.

Lastly, the proposal should be reviewed for any features which may offset or improve the aesthetic conditions of the area. This may include landscaping, height, provision of open space and certain design features which will distinctly affect the local values.

Criteria and Standards

Information is available from a variety of sources in regard to current criteria and standards which may require conformity. All projects should therefore be checked against the prevailing legislated code requirements, if any, and comparison checks should be made using professional accredited criteria and standards not mandated by law.

The following criteria are suggestive of a procedure to be employed in regard to aesthetic impacts:

ESTIMATED VISUAL IMPACT

<u>Scale</u>	<u>Criteria</u>
A+	There will be an improvement or positive impact on the visual appearance of the area.
A	There will be <u>no</u> improvement or positive impact on the visual appearance of the area.
A-	There will be no effective change in the perceived visual content of the project or from the project.
B	There will be changes in appearance but design measures can reduce or eliminate the problem.
C	Overall visual appearance will definitely be reduced by the project.
D	The project will be visually offensive and not in harmony with the surrounding neighborhood or community.

Aesthetics References and Bibliography

Questions dealing with aesthetics which may arise during the evaluation process can be directed to a range of sources which are available for purposes of local assistance. The following list is not intended to suggest an ordering of sources, but only possible sources of information and assistance.

The following aesthetics Bibliography is provided as an up-to-date selection of material which may be of additional help.

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City, County, and Regional Planning Office

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HISTORIC/ARCHEOLOGICAL

by

Dr. Joseph Luther¹Rationale

Historic preservation, as defined by the National Trust for Historic Preservation, is "...a well rounded program of scientific research and study, protection, restoration, maintenance and the interpretation of sites, buildings and objects significant in American history and culture." The primary purpose of historic and archeological considerations is maintaining the community's cultural heritage for public use and enjoyment and as an educational resource.

To be of historical or archeological significance, a structure, area or site should have outstanding significance in the community in which it exists. Such significance is qualified in the criteria listed for this section.

Historic and archeological sites are also of economic value to a community. They will produce added revenues if operated as a commercial venture. Both private and public sites and districts attract tourism. The potential destruction of these resources should be carefully considered in light of the potential loss of economic values to the community.

Key Questions

An evaluation of development projects relative to historical/archeological considerations should be commenced by asking the following questions:

1. Are there any existing historic or archeological sites, structures, objects or areas in the vicinity of the proposed project?
2. Will the proposed project affect, eliminate or enhance any of these historical or archeological resources?

¹ Associate Professor, Department of Urban and Regional Planning, Eastern Washington University.

Methodology

The methodology of assessing project impacts upon any historical or archeological resources of significance may be accomplished by determination of and mapping the location of the sites. By comparing the project site map with this map of significant features, it can be determined if any historical or archeological sites, structures, objects or areas will be affected by the proposed action.

If a feature will be affected, it should be determined what steps will be taken to preserve or restore these features. If such a feature is on the State of Federal Register of Historic Places, specific procedures will be required. The procedures are set forth and may be obtained by contacting the State Historic Preservation Officer for further information.

Criteria and Standards

Information is available from a variety of sources in regard to standards which may require conformity. All projects should therefore be checked against the prevailing legislated code requirements, if any, and comparison checks should be made using professional accredited criteria and standards not necessarily mandated by law.

Included herein are criteria and standards as provided by professional sources. They are general indicators and one should always look for minimal requirements as set forth in the Revised Code of Washington and federal, county, and municipal codes.

Determination of historic or archeological significance may be made from the following criteria:

1. Historic structures or sites in which the broad cultural, political, economic or social history of the community is best explained.

2. Structures or areas that are identified with the lives of historic people or with important events in the main currents of national, state or local history.
3. Structures or areas that embody the distinguishing characteristics of an architectural type, inherently valuable for a study of period or method of construction, or a notable work of a master builder, designer or architect whose individual contribution influenced his age.
4. Structures or sites of archeological interest that contribute to the understanding of aboriginal man in America.

Historical/Archeological References and Bibliography

Questions dealing with historical/archeological impacts which may arise during the evaluation process can be directed to a range of sources who are available for purposes of local assistance. The following list is not intended to suggest an ordering of sources, but only possible sources of information and assistance.

The following historical/archeological Bibliography is provided as an up-to-date selection of materials which may be of additional help.

References

Local Planning Office

Local Universities and Colleges

Eastern Washington Historical Society
Northwest History Research Facilities
Librarian
Curators of History and Art
W. 2316 First Avenue
Spokane, Washington 99204
509-456-3931

Office of Archeology and Historic
Preservation
111 W. 21st Avenue
Olympia, Washington 98504
206-753-4117

Washington Archeological Research Center
Washington State University
Pullman, Washington 99163

Washington State Capitol Museum
211 W. 21st Avenue
Olympia, WA 98501
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Washington State Historical Society
315 North Stadium Way
Tacoma, WA 98403

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PHYSICAL IMPACTS

by

Dr. Joseph Luther¹Rationale

This guide has focused on the probable impacts and associated costs which may be expected to occur in conjunction with growth and development. No attempt has been made here to deal with impacts and costs to the physical environment. If the project being reviewed appears to have environmental impacts associated with it, the provisions of the Washington State Environmental Policy Act (SEPA) RCW 43.21C and its associated WAC 197-10 will have to be complied with. (Local government should adopt this administrative code by reference.) With the SEPA guidelines as a benchmark the following items should be investigated in reference to impacts.

1. Earth
 - A. Geology
 - B. Soils
 - C. Topography
 - D. Unique physical features
 - E. Erosion
 - F. Accretion/Avulsion
2. Air
 - A. Air Quality
 - B. Odor
 - C. Climate
3. Water
 - A. Surface water movement
 - B. Runoff/absorption
 - C. Floods
 - D. Surface water quantity
 - E. Surface water quality
 - F. Ground water movement
 - G. Ground water quantity
 - H. Ground water quality
 - I. Public water supplies

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4. Flora
 - A. Numbers or diversity of species
 - B. Unique species
 - C. Barriers and/or corridors
 - D. Agricultural crops
5. Fauna
 - A. Numbers or diversity of species
 - B. Unique species
 - C. Barriers and/or corridors
 - D. Fish or wildlife habitat
6. Natural Resources
 - A. Rate of use
 - B. Nonrenewable resources

Key Questions

As a means of providing appropriate questions to be asked regarding these physical environmental factors, the SEPA checklist for these items is included on the following pages. This may be used as a checklist in reviewing any proposed project.

ENVIRONMENTAL CHECKLIST

Introduction: The State Environmental Policy Act of 1971, chapter 43.21C RCW, requires all state and local governmental agencies to consider environmental values both for their own actions and when licensing private proposals. The Act also requires that an EIS be prepared for all major actions significantly affecting the quality of the environment. The purpose of this checklist is to help the agencies involved determine whether or not a proposal is such a major action.

Please answer the following questions as completely as you can with the information presently available to you. Where explanations of your answers are required, or where you believe an explanation would be helpful to government decision makers, include your explanation in the space provided, or use additional pages if necessary. You should include references to any reports or studies of which you are aware and which are relevant to the answers you provide. Complete answers to these questions now will help all agencies involved with your proposal to undertake the required environmental review without unnecessary delay.

The following questions apply to your total proposal, not just to the license for which you are currently applying or the proposal for which approval is sought. Your answers should include the impacts which will be caused by your proposal when it is completed, even though completion may not occur until sometime in the future. This will allow all the agencies which will be involved to complete their environmental review now, without duplicating paperwork in the future.

NOTE: This is a standard form being used by all state and local agencies in the State of Washington for various types of proposals. Many of the questions may not apply to your proposal. If a question does not apply, just answer it "no" and continue on to the next question.

ENVIRONMENTAL CHECKLIST FORM

1. BACKGROUND

1. Name of Proponent _____
2. Address and Phone Number of Proponent: _____

3. Date Checklist Submitted _____
4. Agency Requiring Checklist _____
5. Name of Proposal, if applicable: _____
6. Nature and Brief Description of the Proposal (including but not limited to its size, general design elements, and other factors that will give an accurate understanding of its scope and nature):

7. Location of Proposal (describe the physical setting of the proposal, as well as the extent of the land area affected by any environmental impacts, including any other information needed to give an accurate understanding of the environmental setting of the proposal):

8. Estimated Date for Completion of the Proposal: _____
9. List of all Permits, Licenses or Government Approvals Required for the Proposal (federal, state and local -- including rezones):

10. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain: _____

11. Do you know of any plans by others which may affect the property covered by your proposal? If yes, explain: _____

12. Attach any other application form that has been completed regarding the proposal; if none has been completed, but is expected to be filed at some future date, describe the nature of such application form:

II. ENVIRONMENTAL IMPACTS

(Explanations of all "yes" and "maybe" answers are required)

	Yes	Maybe	No
1. Earth. Will the proposal result in:			
(a) Unstable earth conditions or in changes in geologic substructures?	—	—	—
(b) Disruptions, displacements, compaction or overcovering of the soil?	—	—	—
(c) Change in topography or ground surface relief features?	—	—	—
(d) The destruction, covering or modification of any unique geologic or physical features?	—	—	—
(e) Any increase in wind or water erosion of soils, either on or off the site?	—	—	—
(f) Changes in deposition or erosion of beach sands, or changes in siltation, disposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake?	—	—	—
Explanation _____			
2. Air. Will the proposal result in:			
(a) Air emissions or deterioration of ambient air quality?	—	—	—
(b) The creation of objectionable odors?	—	—	—
(c) Alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally?	—	—	—
Explanation _____			
3. Water. Will the proposal result in:			
(a) Changes in currents, or the course or direction of water movements, in either marine or fresh waters?	—	—	—
(b) Changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff?	—	—	—
(c) Alterations to the course or flow of flood waters?	—	—	—
(d) Change in the amount of surface water in any water body?	—	—	—

	Yes	Maybe	No
(e) Discharge into surface waters, or any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity?	___	___	___
(f) Alteration of the direction or rate of flow of ground waters?	___	___	___
(g) Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?	___	___	___
(h) Deterioration in ground water quality, either through direct injection, or through the seepage of leachate, phosphates, detergents, waterborne virus or bacteria, or other substances into the ground waters?	___	___	___
(i) Reduction in the amount of water otherwise available for public water supplies?	___	___	___
Explanation _____			

4. Flora. Will the proposal result in:

(a) Change in the diversity of species, or numbers of any species of flora (including trees, shrubs, grass, crops, microflora and aquatic plants)?	___	___	___
(b) Reduction of the numbers of any unique rare or endangered species of flora?	___	___	___
(c) Introduction of new species of flora into an area, or in a barrier to the normal replenishment of existing species?	___	___	___
(d) Reduction in acreage of any agricultural crop?	___	___	___
Explanation _____			

5. Fauna. Will the proposal result in:

(a) Changes in the diversity of species, or numbers of any species of fauna (birds, land animals including reptiles, fish and shellfish, benthic organisms, insects or microfauna)?	___	___	___
(b) Reduction of the numbers of any unique, rare or endangered species of fauna?	___	___	___

	Yes	Maybe	No
(c) Introduction of new species of fauna into an area, or result in a barrier to the migration or movement of fauna?	___	___	___
(d) Deterioration to existing fish or wildlife habitat?	___	___	___
Explanation _____			

6. Natural Resources. Will the proposal result in:

(a) Increase in the rate of use of any natural resources?	___	___	___
(b) Depletion of any nonrenewable natural resource?	___	___	___

Criteria and Standards

Information is available from a variety of sources in regard to current criteria and standards which require conformity. All projects should be checked against prevailing code requirements. These are specifically set forth in the Washington State Environmental Policy Act (SEPA) RCW 43.21C.

Additional criteria and standards may be used for comparison purposes and checks should be made with professional sources with technical expertise.

Physical Impact References & Bibliography

Questions dealing with physical impact which may arise during the evaluation process can be directed to a range of sources available for purposes of local assistance. The following list is not intended to suggest an ordering of sources, but only possible sources of information and assistance.

The following physical impact Bibliography is provided as an up-to-date selection of materials which may be of additional help.

References

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Olympia, Washington 98504
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Washington State Department of Fisheries
115 General Administration Building
Olympia, Washington 98504
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206- 753-5700

Washington State Department of Natural Resources
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Small Towns Institute
407 Barge Hall
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Ellensburg, Washington 98926
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Washington State Planning & Community Affairs Agency
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